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Medicine In a Changing World¹

VIRGINIUS DABNEY

Editor, Richmond Times Dispatch, Richmond, Virginia

It was just one hundred years ago that the great institution, whose founding we celebrate today, emitted its first birth cries in quarters set up in the old Union Hotel at 19th and Main Streets. Dr. Augustus L. Warner was the first dean when the college began to function in 1838. It was originally a department of Hampden-Sydney College, and then was operated independently from 1854 to 1860. Since the latter year, the Medical College of Virginia has been a State institution.

During the century that the college has been in operation, it has grown from a small, modestly-equipped school, offering courses in medicine and pharmacy, to the center of learning and research which is now in its 101st session. With a \$5,000,000 plant, a splendid faculty and up-to-date courses in medicine, pharmacy, dentistry, and nursing, the institution whose natal day we celebrate is extending the frontiers of medical education in Richmond, serving many thousands of persons in need of clinic treatment or hospital care, and enriching the community and state of which it is a part.

The subject which I have chosen to discuss briefly today is "Medicine in a Changing World." From the time of Aesculapius, Hippocrates, and Galen on down through the centuries to the present day, no profession has undergone more profound and more fundamental changes than the profession of medicine. Medicine is a composite of many branches of learning, and as these branches of science and the humanities developed with the advancing frontiers of knowledge, methods of treating disease and alleviating pain developed correspondingly. While Galileo was scanning the heavens and adding immensely to our knowledge of the physical universe, Harvey was revolutionizing medical science with his discovery of the circulation of the blood. And while Darwin was changing all our conceptions of how man evolved from the primordial ooze, Pasteur, that noble soul whom Osler called the greatest man who ever entered the kingdom of

¹Founders' Day address, at the Centennial Celebration of the founding of the Medical College of Virginia.

science, was giving to mankind his epochal experiments and conclusions.

The nineteenth century was an era of astounding progress in those branches of learning which go to make up the science of medicine. The *Origin of Species* burst upon a mid-Victorian world in 1859 with an impact well nigh as catastrophic as that which had accompanied the discovery of the solar system by Copernicus four centuries before. The promulgation of the Darwinian hypothesis profoundly affected the development of biology, pathology and other branches of science which impinge upon the sphere of medicine. It gave all branches of science a fillip whose effects lasted for decades.

The nineteenth century was remarkable not only for the advances which it witnessed in ascertaining the causes of disease and the means of curing it, but also in the virtual elimination from vast areas of such dreadful scourges as malaria, typhus, and small-pox. Preventive medicine went forward importantly in the late years of the century, and methods of sanitation reached new frontiers. Water and milk supplies and sewage systems were controlled with something approaching adequate care, and infant mortality rates began to descend from the astronomical heights they had occupied.

These were among the major contributions of the 19th century in the medical field. There have been many comparable advances in the 20th, advances in preventive medicine, in therapeutics, in surgery, in chemistry, and biology and related branches of learning. Over against Koch and Virchow, this century can place Carrel and Banting. As a counterweight to the 19th century's notable progress toward wiping out malaria and smallpox, the twentieth can cite similarly striking advances with respect to yellow fever and

diphtheria.

But while we are living in an age when new discoveries of all kinds are constantly being made, and there appears to be no limit to the potentialities of human ingenuity, I make bold to predict that medicine in the twentieth century will be distinguished from medicine in the nineteenth not so much because of greater discoveries, but because of a change in direction, emphasis and organization. The days of new discovery are far from ended—please do not misunderstand me. We may be, and we probably are, on the threshold of epoch-

making examples of inventive genius in all the various categories of medical learning. But I venture to guess that the most significant contribution of the present age to American medicine, if not to world medicine, will be the more adequate organization of the facilities we have in providing medical care for those who heretofore have usually gone without it, or at least have enjoyed care of a wholly inferior grade. Those unfortunates who have resorted heretofore to incantations in lieu of diagnosis, and snake oil as a substitute for surgery, will probably be furnished hereafter with something approaching proper medical care, and at moderate cost.

I realize that I am treading here on rather perilous ground, and that a layman, such as I, should be measurably circumspect in making such sweeping predictions. But while I recognize that there are differences of opinion on these matters, and while I respect the views of those who disagree with me, I cannot ignore the numerous signs which point to a new orientation of the medical profession in the United States.

Precisely how that orientation is to be achieved, I shall not attempt to predict. There is a great diversity of views here, even among those who favor a change. Since I am far from being a specialist in this field, I have no idea of venturing too deeply into the quagmires of prophecy. At the same time, there are certain considerations which seem to me to be worth emphasis here.

The first is that America has just passed through a period in which social change has been tremendous. Roosevelt Administration, whether you like it or whether you don't-and I am certainly not a 100 per cent blown-inthe-bottle New Dealer-has done more to alter the face of our governmental policy and the attitude of the State toward the underprivileged than any presidential administration in our history. The administration has made mistakes, but it has also made an indelible impression on American institu-I say "indelible" for the tions and American attitudes. reason that I have no idea that we shall ever return to the old system, when all individuals were rugged, and the prevailing mores were geared to a relatively simple agrarian society, rather than to the immensely complex industrialized civilization of which we are today a part. The anti-Admin-

istration trend shown in the recent elections does not shake my belief that the New Deal, in its major manifestations, is here to stay. The fact that a large number of our supposedly conservative Republican friends eagerly embraced the Townsend plan in the recent elections, and rode to victory by means of it, should convince the skeptical that so far from repudiating the basic ideas behind the New Deal, certain segments of the electorate showed their willingness to swallow economic and social nostrums which President Roosevelt had attacked as dangerous and unsound. I recognize, of course, that taken by and large, the election returns have given a distinct check to the radical Leftwingers in the Administration's councils, and I regard this as a most salutary political phenomenon. At the same time, I cannot believe that the Republican candidate for the presidency in 1940 will do more than attack the methods by which the Roosevelt objectives have been carried out. If he wins, as he may do, there will probably be substantial changes in those methods, but the objectives will remain substantially unchanged.

I should be willing to wager a considerable sum that the Federal social security program is less likely to be abolished than almost any other governmental mechanism set up by the New Deal. It may undergo basic alteration as to the means by which benefits are collected and distributed. But the fundamental idea that the government has a responsibility for the dispossessed and the underprivileged is certain to endure.

That is why I think it is so probable that the coming years will bring us a new relationship between medicine and government. Just as social security has long been a fact in Great Britian and numerous other European countries, so state medicine, socialized medicine, or whatever terminology you prefer, has long been an established factor in those countries.

I recognize that the American program is merely in the discussion stage today, and that it will doubtless go through a long period of debate before it is enacted into law. That is as it should be. So far-reaching a step should not be taken, without the most careful consideration and study.

I recognize, too, that there are highly important aspects of the existing system which should by all means be safeguarded under the plan. One of these, needless to say, is the relationship between the family physician and his patient. There is hardly a more sacred relationship in our society, or one that I should be more reluctant to disturb. For my part, I have a feeling toward my family doctor which is almost like that toward my own father. I could not consent to any plan which would disrupt this relationship. What I should like to see is the working out of a system under which those who prefer to maintain existing relationships with their private physicians can do so.

What, in general, has been England's experience with compulsory health insurance, where it has been in force since 1911? England is far smaller and more homogeneous than the United States, so that analogies should not be indiscriminatingly made, but authoritative findings with respect to British experience should prove instructive to those of us in this country who are concerned with this problem. Ten years ago, the British Medical Association adopted the following resolution by an almost unanimous vote:

"The measure of success which has attended the experiment of providing medical benefit under the National Health Insurance Acts system has been sufficient to justify the profession in uniting to secure the continuance and improvement of the system." Similar resolutions have been adopted by that association in more recent years.

Consider also the report of a British Royal Commission on National Health Insurance, which tabulates the following

"immense gains":

"(a) Large numbers, indeed whole classes, of persons are now receiving a real medical attention which they formerly did not receive at all; (b) the number of practitioners in proportion to the population in densely populated areas has increased; (c) the amount and character of medical attention given is immensely superior to that formerly given in the great majority of clubs; (d) illness is now coming under skilled observation and treatment at an earlier stage than was formerly the case; (e) the work of practitioners has been given a bias towards prevention that was formerly not so marked; (f) clinical records are being provided which may be made of great service in relation to public health and medical research; (g) cooperation among practitioners is being encouraged to an increasing degree; (h) there is now a more marked recognition than formerly of the collec-

tive responsibility of the profession to the community in respect of all health matters."

Similarly favorable findings are contained in a recent statement of Sir Henry Brackenbury, M.D., a member of the Royal College of Surgeons of England and chairman of the Council of the British Medical Association.

Now I am aware that the \$850,000,000 which is being talked of as the amount which would be spent on the projected American public hospitalization and insurance health program, is a very large sum of money. It is a particularly large sum just now, when the Federal Government has been running in the red for ten years, and there are no prospects of its getting out at any time in the near future.

Could that amount of money be found without working a serious hardship on some classes of people or bringing on a dislocation of our economy? I do not pretend to know the precise answer to that question, but I think I can point to a few facts which bear upon it.

- (1) Over 40 per cent of doctors' bills are six months overdue, and those who pay their bills promptly have to pay more to compensate for those who do not.
- (2) If our present facilities for treating disease were fully used, they would provide nine-tenths of the medical care and one-half the dental care which satisfactory standards require, whereas we are now getting only about half the required medical care and about a quarter of the required dental care. This is the conclusion of William Trufant Foster in his authoritative brochure, "Dollars, Doctors and Disease."

(3) More than \$3,000,000,000 is spent annually for medical care in this country, but of every \$30 thus disbursed, \$29 goes to the treatment of disease and only \$1 to public health

services for its prevention.

Isn't there something wrong with this picture? Isn't it obvious that the medical profession in this country, in collaboration with governmental agencies, needs to do a better job of organizing? What an amazing situation, where 29 times as much is spent to treat persons who have already been taken ill as is spent to keep them from getting ill in the first place!

When I say that better organization is needed, I intend no reflection upon any one. The doctors of this country deserve our respect and our admiration for the vast amount of charity work which they do and for the countless humanitarian acts which they perform. No one realizes this better than I. But when the cold facts are confronted, it becomes all too obvious that millions of people are being medically neglected under existing circumstances, largely, I suspect, because the system is inadequate. The time, the energy and the money being spent today in bringing medical care to the people of the United States can, I believe, be channeled in directions which will not only care for all who are being cared for now, but will extend that care to great numbers who are overlooked.

We of the South should be especially aware of the short-comings which afflict the present system. United States Surgeon-General Thomas Parran has just released some statistics bearing directly on the point. In 1936, there were over 3,500 deaths from pellagra, a disease due to dietary deficiencies, and practically all of them were in the South. Of 177,000 people examined in the South in recent years, 13.9 per cent had hookworm. The typhoid fever death rate in the South is five times as great as that for the rest of the country, and the tuberculosis rate is likewise much higher. The number of physicians per capita is far lower in the South while hospitals and sanitoria are also less numerous.

And so it goes. The South, as Dr. Parran said, is not only Economic Problem No. 1 but it is Health Problem No. 1. The fact seems to be recognized by the Southern Medical Association, whose individual members only a few weeks ago approved the general principles of the proposed \$850,000,-

000 national health program.

And lest we leap to the conclusion that \$850,000,000 is a sum wholly beyond our reach, under existing conditions, let us note carefully one particularly striking statement from Surgeon-General Parran, namely, that the economic loss each year to the South from malaria alone is \$500,000,000. Think of it! Half a million dollars lost to this region every single year from one disease alone. A major element in this computation is the lessened efficiency of industrial workers who have malaria. Textile mill owners estimate that the production of Southern mills is one-third less than it ought to be, simply because so many of the workers have this disease. It is worth noting, too, that these textile workers are almost

100 per cent white. It cannot be argued, therefore, that the South's health problem is exclusively a Negro problem.

The millions of tenants and sharecroppers, whether white or colored, who are spread over the cotton and tobacco belts, the millions of laborers of both races in the Southern cities, can never be rehabilitated economically until they are healed physically. An immense percentage of these people are sick today. They have malaria, or hookworm, or pellagra or venereal disease. A large-scale assault on this colossal health problem is essential to a permanent solution of the South's economic and social ills.

And so as we observe this anniversary of the founding of the Medical College of Virginia, I would leave with you the thought that the paramount issue before the medical profession today, and especially the Southern branch of the profession, is how to meet the problem which is presented by the largely untreated, unhospitalized masses of this country, and how to lessen the staggering costs of medical care.

Already there have been successful experiments toward relieving the burdens of heavy medical costs. The group hospitalization program now in operation in Richmond and some threescore other American cities is a successful departure into new fields. Proposals for compulsory or voluntary health insurance, or for an expanded system of public medicine, are sure to come before Congress at its next session.

Let us approach this problem in the same spirit of inquiry and open-mindedness, which informed the great medical discoveries of the past. In the spirit, I am confident that the twentieth century will not only advance the frontiers of medical discovery, but will achieve a better synthesis between medical care and medical needs.

An Old Timer Looks at the Pharmacopoeia'

WORTLEY F. RUDD Medical College of Virginia

In 1903, a recent graduate of a small school of pharmacy in the south registered for examination with the Board of Pharmacy of his state. He recalls only two questions that were asked on this examination as the incident later has given him the background for a great many other questions for which he has striven to find answers in the years that have passed since that ordeal. The first question was: What is the United States Pharmacopæia? This was answered in orthodox fashion. The second that he remembers is: What is the Dispensatory? His answer: It is a book about drugs that makes it unnecessary for students and pharmacists to buy a United States Pharmacopæia.

It was seven years later at the 1910 United States Pharmacopœial Convention that this same student, now an instructor in his Alma Mater, really began to appreciate the full significance of these questions and his somewhat facetious answer to the second question. A novice in all things pharmaceutical, except those within the rather narrow confines of his own school and state, he was completely bewildered at the things he saw and heard at this, his first United States Pharmacopæial Convention. In the first place, practically all that was said and done seemed to be in the hands of a relatively small group, most of them from a few of the independent schools of pharmacy in the east.

The Revision Committee, Board of Trustees and convention officers were elected and he went home to think it all over leisurely. Many questions came to his mind during the next decade. How had it come about that the compilation of a national compendium on drugs had fallen into the hands of such a localized group? Why did the men most active in United States Pharmacopæial revision prepare other compendia that made the purchase and use of the United States Pharmacopæia itself largely unnecessary?

¹This is the first of a series of articles to be published in this Journal for the purpose of giving those interested in the revision and general arrangement of the United States Pharmacopæia a clearer conception as to how it is done.—Editor.

During the years that intervened between 1910 and 1920, he began to realize that the control of the Pharmacopæia was the grand prize in American pharmacy. Why was this true? In our attempt to get some of these questions answered, we thought that authentic information about the finances of the United States Pharmacopæia would be helpful. This has been furnished by Chairman Beal of the Board of Trustees. Honoraria paid the chairman, other members of the Revision Committee, secretary and treasurer, respectively, of the United States Pharmacopæial Convention, and to the authors of certain articles published in the Journal of the American Medical Association, as per Mr. Beal's report, are as follows:

HONORARIA, 1930-382

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²Unfortunately some of the initials and even the spelling of the last names are in error in this list which was sent to Mr. Rudd by Mr. Beal. They are printed as received from Mr. Beal.—Editor.

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Regarding payments made by the Board of Trustees for research materials, etc., in connection with revision, Chairman Beal wrote us as follows on February 18:

"Replying to your favor of February 10, will say that payments for research work, conducted by graduate students and others, under the direct supervision of members of the Revision Committee are carried in separate accounts according to the Division of Research to which they belong. I believe the cost of materials employed in such researches is carried under the same accounts. During the decade there was a large number of such payments, probably aggregating more than the total sum included under the head of Honoraria."

These data will be published in the second of this series of articles. Succeeding articles will carry certain other information which may prove helpful to those having any general interest in the United States Pharmacopæial mechanics of its revision, and its general management.

The Significance of Correlations between Achievement and Predictive Tests*

MARJORIE E. MOORE and C. H. ROGERS
University of Minnesota

For many years there has been a great deal of discussion about entrance requirements, student selection, prediction of scholastic success, and student guidance, but few experimental studies in these fields have been extensive enough to carry much weight. For this reason, in 1932 the Board of Admissions of the University of Minnesota began the sponsorship of a series of investigations on admission requirements and the prediction of college success in different professional schools. These studies were carried on under the direction of Dr. Harl R. Douglass, a member of the Board of Admissions, through the facilities of the University Committee on Educational Research with the cooperation of the different professional schools. The problem centered around the selection of a test, or a battery of tests, and other available factors from which it would be possible to determine a student's probability of success in college.

^{*}Read before the Conference of Teachers of Chemistry at the 1938 Minneapolis Meeting.

A discussion of the investigation in the College of Pharmacy is impossible at this time, therefore we will outline briefly the general procedure involved in such a study and then attempt to demonstrate the significance of the results which might be obtained.

A study of this type should be carried on over a period of years, preferably four or five, to obtain reliable results. The procedure usually followed is to select a battery of tests which, on the basis of information available concerning them, appear to have some value in predicting success in the special field. This test battery is then administered to the group of students entering the particular school. The scores on the different sections of the test battery should be supplemened by other information about the student; such as, age, previous college record, and high school average mark. When the school year is completed the grades made by each student should be obtained and the honor point ratio computed. This honor point ratio is usually used as the measure of success and will be referred to as the earned H. P. R. in the rest of this discussion. The data thus collected should then be subjected to complete statistical analysis. The test battery should be revised on the basis of the results of this analysis. Some of the tests, those which appeared to be of no value should be omitted and others put in their places; some sections might need revising, and some might be left as they were in order to obtain more information concerning them. In some instances such a study might very well necessitate the preparation of examinations especially suited to the project. The testing program, the collection of other data, the statistical analysis, and the revision of the battery should be continued year after year until a satisfactory battery of tests and other data concerning the student can be selected. The full program should then be carried on for at least two more years, and the final analysis made on the basis of these results.

If all relationships are linear, it is possible to determine the correct weight to assign to each one of the predictive variables (different sections of the test battery and the other factors) when used jointly to determine the most likely H. P. R. for particular combinations of the variables. This equation may then be used to predict the most likely H. P. R. for each individual in the group. The correlation between

these predicted H. P. R.'s and the actual earned H. P. R.'s is the measure of association between the different predictive variables considered jointly and the earned H. P. R. This measure of association is called the coefficient of multiple correlation.

The question now arises as to the significance of this relationship between the different predictive variables and achievement as measured by the H. P. R.. First, there is the question of whether or not a coefficient of multiple correlation based on a particuar sample, indicates real correlation in the supply, and second, if this be true, what is the significance or value of the equation which was basic to this correlation coefficient in predicting achievement.

Let us assume that we have carried on a study for five years. In the fourth and fifth year we have used a battery made up of three tests and have supplemented it by the high school average so that we have four predictive variables. Let us assume further that in the fourth year we obtain a coefficient of multiple correlation of 0.75 on 100 cases between the predictive variables taken collectively and the earned H. P. R. In the fifth year using the same predictive variables, we obtain a coefficient of multiple correlation of 0.80 on a group of 80 students.

Let us now answer the first question. The sampling distribution of the multiple correlation coefficient for an uncorrelated supply is known. On the basis of this knowledge, it is possible to determine the probability that a certain coefficient of multiple correlation could occur through errors of random sampling when there is no association in the supply. Using this technique there is found to be less than one chance in a hundred that a multiple correlation coefficient of 0.75, based on a sample of 100, could arise from a supply in which there is no correlation, and the same is true for the multiple correlation coefficient of 0.80, based on a sample of size 80. There is therefore little doubt that real correlation exists in the supply from which we are sampling.

¹Use has been made here of Table IV, "The significance or nonsignificance of association as measured by the Correlation Ratio and of Multiple Association as measured by the Multiple Correlation Coefficient (Table computed by Dr. T. L. Woo)." Tables for Statisticians and Biometricians. Part II, page 16.

We will now consider the value of the equation in predicting achievement. The reliability of a predicted value may be determined by the standard error of estimate. From this we are able to determine the probability that the true value will fall within a certain range. The standard error of estimate for an H. P. R. predicted by using the equation from which we obtained a multiple correlation coefficient of 0.75 is .33, assuming that the standard deviation of the earned H. P. R. is .50. For an individual with a predicted H. P. R. of 1.00, the chances are 68 in 100 that his true H. P. R. would lie between .67 and 1.33. Similarly the standard error of estimate is .30 when the multiple correlation coefficient is 0.80 and the same standard deviation .50 is assumed. Therefore an individual with a predicted H. P. R. of 1.00 has 68 chances in 100 to earn an H. P. R. between the limits of .70 and 1.30. If it were possible to tell a student that he had more than a fifty-fifty chance of earning a grade within a range of less than one H. P. R. step, it seems that these equations would be of value.

A table of probabilities based on the relationship between the earned H. P. R. and the predicted H. P. R. can be formulated. Entering this table with the predicted H. P. R. for an individual, the probability of his earning a grade as high or higher than a given level may be obtained. This probability is obtained by dividing the number of students who had a predicted grade within or below a specified range and earned grades at or above a certain level by the total number who actually earned a grade at or above that level. This is the maximum probability since it not only includes those who had a predicted grade below the specified range and earned a grade at or above the particular level, but also neglects those who had a predicted grade in the specified range but had an earned grade below the particular grade level. Let us suppose such a table of probabilities has been prepared on the group of 100 students in the fourth year of the study. We might find from the table that 35 per cent of the students who actually earned a grade at or above 1.00 had a predicted grade between or below the range 1.00-1.25, and of those who had earned a grade of 0.00 or higher, 60 per cent of them had a predicted grade between or below the range 1.00-1.25. These are merely examples of what one might obtain; the table of course would have other predicted grade ranges as well as

other earned grade levels. One can calculate a predicted H. P. R. for each of the 80 students in the fifth year of the project by using the regression equation for the fourth year group. Then referring to the table of probabilities, the chances of earning a grade at or above a particular level can be determined for each student. An individual having a predicted H. P. R. falling in the grade range of 1.00-1.25 would have 35 chances in 100 of earning an H. P. R. equal to or greater than 1.00, or 60 chances in 100 of earning an H. P. R. equal to or above 0.00.

The predicted H. P. R.'s for each of the 80 students in the last year of the study could be arranged in order and in that way give the student his probable rank in the group of 80 students. The group of 80 students can also be divided into three groups, the 27 having the highest predicted H. P. R. being put in the upper one-third, the next highest 26 in the middle one-third, and the 27 students with the lowest predicted H. P. R. in the lower one-third. If a student was placed in the lower one-third of the group, we could tell him he was almost certain of being in the lower two-thirds of his class on actual earned H. P. R. and most likely would earn an H. P. R. which would place him in the lower one-third. would be based on information from a three by three fold table of earned and predicted H. P. R.'s set up on the group of 100 students in the previous year, from which we might find that of the 34 students predicted to fall in the lower onethird of the class, 30 of them earned H. P. R.'s which placed them there while none of them fell in the upper one-third.

To demonstrate the accuracy of our prediction, a three by three fold table could be set up for the 80 students showing the relationship between the H. P. R. predicted for them by use of the equation based on the group of 100 students and their actual earned H. P. R. From this we could determine the percentage of students which had been accurately placed within a certain range and thus evaluate the results

In the above discussion, based on hypothetical data, an attempt has been made to point out common and practical methods of dealing with the problem of making use of the statistical results of such a project. Although there are, no doubt, other methods of handling such a study and making use of the results, the material presented here is probably

of our experimentation.

sufficient to indicate that the prediction of college success from a group of selected variables can be of practical value.

The authors wish to thank Dr. Palmer O. Johnson, Professor of Education, University of Minnesota, for his very helpful suggestions in the preparation of this paper.

Evaluating An Understanding of Pharmacognosy'

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Knowledge does not imply understanding. It has been said, "A linguist, who knows the word for broom in each of twenty languages, or a scientist thoroughly versed in the structure of matter, may use a broom less intelligently than the housewife." No one can successfully refute the statement that students of pharmacy should have a thorough knowledge of drugs. If not, why not let the grocer compound medicines? But I, for one, do not believe this should be obtained parrot-fashion without understanding. students to memorize statements concerning drugs does not constitute my conception of teaching. Reproducing from memory the structure and constituents of all the important drugs will be of little benefit to pharmacists in the practice of their profession. I am not tolerant of the practice of memorizing facts. We have too much mass, factual education without creative spirit behind it. I am interested in fundamental training, development of reasoning power, and the ability to arrive at a justifiable conclusion.

The intellect is indolent by nature and needs to be aroused by some stimulus. "Few are they who have the energy to think; this arduous activity needs the drive of some such emotion as the zeal for truth." Of primary consideration in the arousing of this indolent intellect is the stimulation of interest, not apparent interest which disappears after a superficial knowledge has been obtained, but real interest which continues in a desire for further truth. The lack of interest of an instructor in his subject, as he tries to present the material, diffuses through all the students. But what can be more inspiring than one whose heart and soul are

¹Read at the 1939 Meeting of District Number 2, Richmond, Virginia.

in his work? Such a one can make the work appear worthwhile. To him it is alive, has a soul, and above all a purpose other than the memorizing of visual pictures or the drawing of plant structures.

Before proceeding further let it be clearly understood that I am not setting myself up as an example of one who can impart to students an understanding of pharmacognosy. No one can teach understanding. It cannot be forced by The best that we can do is to furnish the conditions in which understanding may evolve. What we may contribute along the way can serve a useful purpose, but the central steps in the solution of the problem must be taken by the student himself. It is the duty of those of us who are teachers to make the environment of those we touch conducive to thought. As Holmes has said, "All fact collectors who have no aim beyond their facts, are one-story men. Twostory men compare, reason, generalize, using the labors of the fact-collectors, as well as their own. Three-story men idealize, imagine, predict: their best illumination comes from above, through the skylight." We need more three-story intellects with skylights.

In teaching, a certain amount of information must be given the students by the painful drill method. I believe we should rely less and less on this method. I find that I may spend an hour presenting a phase of the work, and when the student needs to apply this he may not remember a significant amount of the information and may have only a hazy idea of the application. Students faced with problems to solve are far more receptive to information, for they must obtain facts and apply them. Early in the course in microscopic pharmacognosy I see that the student has a problem which necessitates the acquisition and application of certain facts. This creates work for the instructor. To keep a class of students busy on individual problems is no easy task. If the problems are not individual they lose most of their value. A few students do most of the work and all the thinking for the class.

Do not misunderstand me when I refer to the assignment of problems. I am aware of the method in vogue of assigning a student a subject telling him to find out all he can about it. The student who profits by this method needs no teacher. Each problem that is assigned should have a solution, and the teacher should know that solution. To force a student to collect information at random does not develop reasoning power.

I realize the sales-resistance to advice about teaching which we have developed is probably the most efficient function ever initiated by the brain of man. Nevertheless. I shall try to illustrate what I have in mind by an example. In teaching microscopy I give the students only a few drugs to examine for characteristic structures, constituents, different types of crystals, etc. After this preliminary work each student is informed that he has a definite number of powdered drugs and mixtures to identify. He has never seen any of these before in my class. A mimeographed copy of a key for the identification of the official drugs and the important non-official ones is given each student. The use of the key, which resembles the schemes used in qualitative chemical analysis, is explained. Each student is assigned a different drug so that no two students have the same drug. When a student reaches his conclusion concerning the identity and presents his reasons for arriving at that conclusion, he is informed whether he is correct or has made an error. If he has made an error, his method of procedure is discussed and the place where he went wrong is pointed out to him. When a student has reached his conclusion concerning the first drug, he is assigned a second drug, and so on. The system of numbers I use when assigning powdered drugs is so confusing that even I have no idea what drug a student has unless I refer to the master sheet. This master sheet would be of no value to the student unless he was taught There may be several different drugs out how to use it. at the same time with the same number.

In assigning powdered drugs to students, those which have no characteristic odor or color are used as far as possible. I must confess that I sometimes place a powdered drug or mixture in a vial which has the odor of some foreign volatile oil, in order to prevent a student from jumping at a conclusion. This may or may not be justifiable. If it teaches the student to assimilate facts, and develops his reasoning power, the ends justify the means. In order to discourage hasty conclusions, I set a limit on the number of drugs a student may miss and pass the course. Three out of a possible twenty-five is the number I usually permit. I

should say that more time is usually consumed in identifying

the first five drugs than the remaining twenty.

I think the above single example illustrates what I mean by assigning a problem. The nature of the problem will vary with the different courses. This is the most time consuming method of teaching I know, but I believe it offers possibilities of furnishing conditions in which understanding may evolve.

How can we evaluate an understanding of pharmacognosy? I do not believe it can be done by giving any of the types of examinations usually proposed. In the example given above, the giving of an examination is superfluous. I have given different types of examinations with amusing results. one class two students, who had the highest averages, and were generally regarded as the best students in the pharmacy school, made the two lowest grades. The amusing thing was that on the same examination two students who had the two lowest averages, and were generally considered at the bottom of the class, made the two highest grades. The results of this examination remind me of the survey that was published recently in which, according to the examinations given, freshmen in our colleges were just as educated as seniors. According to the report, this was true so far as any of the usual types of examinations were used. Do you believe this? To me it simply indicates that our systems of evaluation are very, very poor.

Many values cannot—and should not—be equated in mathematical terms. This, McWhorten realized when he said, "No yardstick can measure the length or breadth of the fabric we call culture. The invisible things—to the physical eye—the intangible things—to the material touch—are of far more beautiful and sensitive quality to the mind's eye and the soul's touch, as they are likewise more durable."

While writing this paper, I was constantly thinking of a comment on Oswald Spengler's statement, "To a great extent modern civilization has descended from the perspective of a bird, to the perspective of a frog." This comment was "We have descended not only from the perspective of a bird to the perspective of a frog, but also to the perspective of an earthworm." Any system of evaluation should have three dimensions, length, width, and depth. If we miss one dimension we have only a surface, flat, without volume; if

we miss two dimensions, we have only a line, a one-track mind or a one-track character. It takes all three dimensions to have anything with volume or with substance. Our perspective should not be two dimensional, like the earthworm that has no comprehension of depth, but it should be threedimensional with length, breadth, and above all, depth.

The 1939 Meeting of the American Council on Education

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You have asked for my impressions of the annual meeting of the American Council on Education at the Mayflower Hotel, Washington, D. C. May 5th and 6th, 1939.

One noted first the organized business-like procedure of registration. This same thoroughness was evident also in the display of publications, and the ready distribution of those that were free.

One might be surprised at the large number in attendance until it was noted that there was a possibility of attendance of representatives from 456 educational associations, institutions of higher learning, state departments of education, city school systems, and private schools.

Upon consulting the history of the activities for 1938-39 one noted the general object of the Council to be "to advance American education in any and all of its phases through comprehensive, voluntary, cooperative action on the part of educational associations, organizations and institutions, and in the fulfillment of that purpose to initiate, promote, and carry out such systematic studies, cooperative experiments, conferences, and other similar enterprises as may be required for the public welfare and approved by the Council" and therefore, one naturally expects the work of the Council to be quite comprehensive.

Noting that the Council had a handsome budget of some \$125,000. for general expenditures, and received grants of money amounting to more than \$780,000 for various special purposes, one realized that there were great opportunities for activity and the attainment of objectives. However, one was not surprised when President George F. Zook stated that it was impossible for him to record completely the program of such an organization in his annual report, and listened with interest to his presentation of the activities of five major sections, including the work of several standing committees, programs of a number of major projects, new undertakings to be launched, and the consideration of the long-time program of the Council. One also learned from this report that all of these committees, projects and plans are functioning under the general supervision of two committees—the Executive and the Problems and Plans Committee.

The Friday afternoon session was devoted to five conference sections and one might select to listen to discussions and observe demonstrations concerning "American Youth Commission", "Educational Motion Picture Project", "Commis-

sion on Teacher Education", etc.

The two addresses following the 7:00 o'clock formal dinner on Friday evening were outstanding. Dean Herbert E. Hawkes, Chairman of the American Council on Education, echoed the obvious aim of most educators when he stated that "our only hope for the future lies in that increase in knowledge and understanding, and in tolerance that ought to follow sound education. . . . The primary aim of education, so far as it has to do with our national culture, is to prepare each individual, intellectually, emotionally and ethically, to take charge of himsef. My point is that the appropriate education of the individual is the sine qua non of a successful However, Dean Hawkes was not unmindful democracy." of the capacity or lack of capacity of some students, and stated that it was the duty of the college to find out what that capacity is, and to fill each to his capacity. He stated that "We should never forget that a pint can be just as full as a gallon. And after all there are more pint cups than gallon measures in every college. The tragedy comes when we try either to force a gallon into a pint cup, or what is just as bad, be content with putting a pint into a gallon jug."

Sir Willmott Lewis, Washington correspondent of the London Times, spoke on the subject "Education and Democracy". He referred particularly to education in *this* democracy, where society is considered homogeneous, and not as reflecting

any stratification of citizens within the general order, in contrast with conditions in other countries. He stated that "If the ruling idea is that government should exist for the benefit of free and equal citizens, politically united in a common purpose, the happiness of all, then education will infallibly be conducted in the spirit of that idea", and that "The nature of a country's educational system will be largely determined by the current form of social organization. It will, moreover, change with its changes, for there is involved not only a principle of action, but of reaction." He agreed with Tawney that the antithesis of mechanism is humanism, stating that the whole fabric and mechanism of social institutions is to be regarded as a means to an end, and that the end is the growth towards perfection of individual human beings. Throughout his entire address one noted that he was calling attention to the many opportunities for education in a democracy like ours.

The Saturday morning panel discussion on "General Education in the United States" was most enjoyable, and reminded one somewhat of a dignified old-fashioned minstrel show, with Dr. Charles H. Judd and President Henry M. Wriston as end men and Dr. Mary A. May as the interlocutor. All seemed to agree that the aim of education is the preservation of society, through an understanding of American institutions and social life, and at the same time to offer an opportunity for the development of the individual. The debatable question seemed to be whether education should be of the general or liberal arts variety, and one feels that the question is still unsettled.

Luncheon was served at The Cosmos Club and provided a splendid opportunity to meet new friends and learn their points of view on the different subjects of discussion.

The Saturday afternoon program included the presentation of two masterful papers, one by Dr. Mortimer J. Adler on "Liberalism and Liberal Education", the other by Dr. Daniel A. Prescott, on "General Education and the Individual". Almost immediately Dr. Prescott restricted his subject to "Man's Psychological Skin" and one became interested to learn just how permeable this skin really is. He noted that a person presents his biological equipment, in the form of inherent urges, drives and equipment to the problems of his environment or cultural pattern. The result of this contact

is a new individual and a new cultural pattern, but as the pattern forever changes, and the personality grows, the problem is never completed. He formulated the concept that an organism is essentially an inter-related and interdependent series of processes rather than of structures, and that most of our behavior is rooted finally in the necessity for maintaining our essential biochemical and biophysical equilibria. He pointed out that an individual is eager for information and experience that relates to his problem, and that the young mind automatically picks out for assimilation into habits and concepts those aspects of experience which relate to his present pre-occupation. He further expressed the opinion that traditional curriculum materials in high schools show a minimum of evident relationship to the problems that are occupying the minds of young people, and indicated that in speaking about the permeability of our psychological skins he wished to direct attention to the fact that youths are developing organisms, that some kinds of experiences induce optimum development and others have little effect, and unfortunately they need help in planning and executing useful activities.

It was a privilege and a pleasure to attend the annual meeting of the American Council on Education and listen to the stimulating addresses and discussions. Professional education as such was not the subject of any particular discussion, but one was made to fully realize that a good general or liberal arts education is a necessary foundation upon

which to build a professional career.

One noted among the many in attendance upon the meetings of the Council, Dr. and Mrs. Robert P. Fischelis, President H. C. Byrd of the University of Maryland, Dr. David E. Weglein, Superintendent of the Baltimore City Schools, and Dean J. Ben Robinson of the School of Dentistry of the University of Maryland. Dr. Rufus A. Lyman and Dean Wortley F. Rudd upheld the dignity and professional standing of the representatives from the American Association of Colleges of Pharmacy.

What Can We Do in Our Locality to Acquaint the Public with the Service Pharmacy Renders?

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The value of the service rendered to the public by the pharmacist is recognized today to a far greater extent than ever before. This is an important sign of progress, but there is still much to be done to impress the significance of this service upon the popular mind and to disabuse people of erroneous ideas of pharmacies and their place in the economy of things.

Charters has said, "A well-informed pharmacist is the best single individual to disseminate information about public health." This is undoubtedly true and few people realize how much information is furnished and how much assistance is rendered by the pharmacist without any charge whatsoever. While the physician deals with individual cases of illness, prescribing for and treating the patients, the drug store serves as a kind of clearing house for general information on health, aside from being the source of supply from which not only medicines are obtained, but also, sanitary and toilet goods and many other closely related articles.

It is our duty to stress constantly the added dignity and usefulness of the pharmacy in the present scheme of things. This is already recognized to a considerable extent, but should be recognized still more. Pharmacists themselves can assist materially in getting such recognition. This can be done in conversations, with customers and personal acquaintances, in well-phrased advertising, and in the attitude of the clerks

and other employees of drug stores.

It needs no elaboration to show the contrast between the drug store of a few decades ago, limited to the sale of old time remedies, for the most part, and often dingy and uninviting in appearance, and the modern, attractive pharmacy with its astonishingly wide range of merchandise. present pharmacy, besides being a public health agency, is also a public institution as indispensable as the fire department and the public school, the chief distinction being that

¹Read at the 1939 Meeting of District Number 5, Sioux Falls, South Dakota.

it is privately owned and managed. In fact, the clients or patients of the pharmacy far outnumber those who utilize the services of the public school or the fire department. As a matter of fact, everybody or nearly everybody patronizes the pharmacy at one time or another, and a large share of people do so almost daily.

Sometimes reference is made in a humorous vein to the fact that the modern pharmacy is virtually a department store, because it sells nearly everything. This, of course, is no reflection on the pharmacy. On the contrary, it is evidence of the key position that the pharmacy occupies in modern life. Just because it occupies that position, it has so rapidly become the place where one can buy such a large variety of useful goods.

When the matter is considered carefully, it will be found that a great proportion of the commodities on sale in drug stores are related directly or indirectly to health—therefore. they are on sale in the logical place. Toothbrushes, toothpaste and powder, safety razors and blades, shaving cream and soap, talcum powder, perfume, toilet water, nail files and clippers, electric heaters, and electric fans—these are just a few of the multitude of things I might enumerate which are found in pharmacies as a rule and all of which, on reflection, have a distinct bearing on the matter of health. They are not drugs, to be sure, but they are certainly factors in keeping people clean and well and comfortable. A survey of the merchandise of average pharmacies will reveal that this principle holds true for the most part. And where articles on sale have little or no connection with health in any way, it must be remembered that it is the natural and proper policy to sell anything in common use which can be exhibited and sold conveniently in such a store, simply because the drug store is the one place visited by almost everyone in the neighborhood, sooner or later. In this respect, it is distinct from the clothing store, the shoe shop, the restaurant, the tailor shop, etc. They are visited infrequently by many people but there is almost nobody who does not go rather often to the nearest pharmacy. It goes without saving that the pharmacy, modernized, expanded and rendered more attractive, is just the spot in which such a variety of goods should be available to the average man or woman.

Soda fountains in drug stores date back many years to a period long before the modernization of the pharmacy. Thousands of drug stores all over the United States now sell a splendid array of books and periodicals, frequently offering famous classics and valuable reference works at extremely low prices. The benefit to the public from this service can hardly be overestimated, but we receive no favorable publicity from this fact. On the other hand at this time we are receiving adverse criticism for the sale of indecent literature. Through the sale of the better type of literature, there is a distinct bearing on health, for worthwhile reading matter is certainly indispensable to mental health which, in turn, is closely related to physical health. So once more the pharmacy is filling an important civic need.

Above and beyond these community services that are so helpful and convenient, is the fundamental service to health itself. The countless cases in which the pharmacist aids his suffering neighbors, often at great inconvenience to himself and not infrequently without compensation or even mention, are an inextricable part of the heroic history of every neigh-

borhood.

The Saturday Evening Post and other magazines prior to Pharmacy Week last October published a striking advertisement of Parke, Davis & Co., headed, "The Story The Papers Didn't Print." An extract is worth quoting, for it applies to so many other pharmacists everywhere.

"There were a lot of things Hal Barnes could have told the papers the day he retired. Out of the worn, leather-bound books that held all the prescriptions he'd compounded in the past 40 years, he could have given them intimate glimpses into the lives, the crises, the heart-breaks of almost everybody in town. If he chose, old Hal could have pointed to those tragic pages that told of despair, tragedy, and heroism the time the town was visited by the devastating flood.

"But Hal Barnes doesn't talk about these things. You can't get a word out of him about his 40 years of service to the community. He'll brag about the perch he caught in Silver Lake, or the pheasant he shot last week, or what the Chamber of Commerce is doing for the town. But never a peep out of him about those emergency calls in the night-about the hours spent at his prescription counter helping alleviate pain and disease and often battling with death itself.

"Hal knew that illness never takes a vacation-and, somehow, he never seemed to find time to take very many himself. Now he's getting a real one, and he's earned it. A plain man, but skilled in his profession, with an intimate knowledge of hundreds of different drugs, and a deep-rooted ideal of service to the neighbors and friends who

made up his world.

"It is a fine thing for America that Hal has his counterpart in thousands of communities throughout the land."

Like Hal Barnes, the average pharmacist does innumerable deeds of mercy and assistance for neighbors, acquaintances, and strangers, but feels in duty bound not to mention them. We represent millions of accumulated and invested capital. We employ thousands and thousands of employees. We distribute uncounted wages which is the material bread of life and turn the wheels of manufactories.

Nor do I forget that there is in us something of the Good Samaritan, who poured the oil and wine; and that our work goes to the healing of human suffering, the finding of new and more helpful agencies for securing help and repelling disease, and to the holding up of the hands of the physician and surgeon, whose ministry is akin to that of Him who ministers to the needs of the human soul. We have the sweetest of all rewards, the consciousness of helping humanity; of somehow, somewhere, making someone happier and better by bringing sleep to a tired eyelid, by bringing rest to an exhausted brain, by bringing relief to pain, cure to disease, and health to infirmity.

We of the pharmaceutical profession hide our light under a bushel in so far as individual acts are concerned. But this does not mean that we should neglect to impress upon the public the inestimable value of the service performed by pharmacies generally. It is only justice to ourselves and fair to the community that this service should be appreciated. In our business and personal contacts, in our advertising, and in every legitimate way, attention should be called to this service.

Special opportunities in this direction arise now and then, as in the observance of National First Aid Week. At that time, every retail pharmacist should do his part in publicizing first aid to the people of his community. The pharmacist who is alert should identify his store as first aid headquarters. Organizations likely to be interested in first aid week should be contacted—the Boy Scouts, Girl Scouts, The National Safety Council, The Red Cross, the schools, and the newspapers. Cooperation from the schools should be arranged early in the season, so that it may be fitted into teaching schedules. Local essay contests, a highly successful means of impressing National First Aid Week

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and its teachings upon youngsters and their parents, should be got under way soon. Club schedules should be consulted to determine if there are openings for speakers on first aid subjects. All of these may be arranged with little difficulty if the pharmacist is watchful for opportunities.

The Fourteenth Annual Pharmacy Week was the most successful and the most generally observed in our history. Significant were the Pharmacy Week messages of President Roosevelt, and also of President Carrington of the New Jersey Medical Society that the week was "A commendable educational effort to impress upon the public the place of the pharmacist in the preservation of public and individual health."

In a general way, the same rule for increasing respect and esteem for our profession holds good that applies to any other profession. But there is the difference that ours is a necessary profession and a service that is frequently most urgent—that many times is the only barrier between life and death. There are a lot of stores and shops that the community can manage to get along without, but it cannot well function without the pharmacy. We are, therefore, doing what is fundamentally essential to the public welfare. Changed economic conditions have also resulted in our doing many other things which are not absolutely essential but which contribute vastly to the convenience and comfort of people. We have a right to genuine pride in our usefulness, in the dignity of our work, and in the duty and charm that characterize the modern, efficient pharmacy as distinguished from the forbidding looking drug store of the past with its pungent odors of old time medicines and its atmosphere suggestive of discomfort and pain rather than of health and cheer. The drug store of 1939 has no more similarity to that of a few score years ago than a handsome parlor illuminated by electricity has to a dirty store room lighted with a tallow candle.

Every citizen engaged in useful, honorable activity should feel proud of his occupation. The pharmacist, however, has a greater right to such self-satisfaction than have members of many other vocations. He belongs to the front ranks from the standpoint of social advancement. To him, the community owes a debt such as it owes to the fireman who risks his life to save a fellow human from a burning building and to the nurse who helps the sick person travel slowly and laboriously a road back to health. Furthermore, he must be a walking encyclopedia of information regarding points of interest in his city, train and street car schedules, location of principal buildings, theater attractions, and everything else concerning which the public may inquire. He must also keep on hand a supply of stamps and enough money to change all the ten and twenty dollar bills circulating in the neighborhood.

He must be courteous and tactful, and at the same time be able to determine what a customer wants when he doesn't know himself. An old lady came into a store one evening recently and asked for a box of canine pills. "What's the matter with the dog?" inquired the druggist, wishing to be of the utmost service. "I want you to understand, sir," she explained indignantly, "that my husband is a gentleman."

The precise methods by which we should strengthen our position in different communities will vary widely and each must work them out for himself. But first of all, we as individual pharmacists must paint for the public the correct picture of our public health service and we can do that by making the prescription department a part of our store with ware and apparatus accurate, immaculate, and aseptic. This same spirit should be reflected in all departments. To the consumer, this means simply better health protection in a variety of ways. Someday the public will demand of all retail stores that they be clean and well equipped, adequately lighted, and conveniently arranged for sanitary display of merchandise. The pharmacy, which has never lost its influence as a community gathering place, is leading this parade.

All of the time, we must keep in mind how much more important is our role in the community than was that of the earlier pharmacists, living up to the increased obligations and winning added appreciation and affection among our patrons and other acquaintances. As a consequence, we shall steadily gain in popular esteem and gratitude. This will be the best advertising we can ever secure. It will entrench us in the hearts of our neighbors more firmly than could any other procedure.

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Development of Pharmacy Laws. The Possibilities and the Responsibilities of Our Profession¹

FRANK W. MOUDRY

President Minnesota Board of Pharmacy, St. Paul

The future standards of the profession of pharmacy in any state are not only raised and maintained by the laws passed and enforced within that state, but also by the character and ability of those who are to make this profession their lifework. It is not sufficient that the student enter our schools of pharmacy with the idea that after a few years of remaining in school he will be graduated and sufficiently equipped to render the pharmaceutical service that is today required of a pharmacist. We want the highest type of men to enter the pharmaceutical profession, and we want for them the best possible education. Let us impress upon the public that pharmacy today and tomorrow is just as necessary a public health profession as is medicine or dentistry.

The public in recent years has taken a greater interest in public health matters and looks upon those branches of the health professions with an eye of watchfulness, waiting to see if they are willing to accept their responsibilities. They are interesting themselves in the various phases of distribution and the quality of drugs and their harmful effects. This interest has brought about much discussion as to the necessity of legislation to adequately protect the public and the advantages of socialized medicine.

In 1937 we pharmacists in Minnesota were successful in passing a pharmacy law which was a great improvement over our old law, but as we administer this law we find that there are sections that could be improved. We also realize that we were short-sighted at that time when we rejected a section restricting the sale of barbiturates. Last week our legislature passed a barbiturate law which was introduced by a layman, and we found it difficult to reason with the author of the bill to accept any amendments. We were interested and desirous of passing such a law, but were also anxious that the mechanics of the law be such that it

¹Read at the 1939 Meeting of District Number 5, Sioux Falls, South Dakota.

would not be a burden upon the professions, and that we would not be placed in a position whereby we would be requested to violate the provisions of the act. Let me say, if we had accepted our responsibility as pharmacists in time, it would not have been necessary for a layman to legislate the profession in doing what was its own responsibility.

Several states today have laws regulating the sale of the barbiturates. In Indiana, legislation is being introduced restricting the sale of barbiturates, aminopyrine, sulphanilamide, dinitrophenol, cincophen, and other drugs to physicians' prescriptions only. Should this type of legislation be sponsored by the public, the medical profession, or the pharmaceutical profession? Again we pharmacists should recognize our responsibility to the welfare of the public to the extent that we take the initiative and have placed on the statute books such laws that will protect the public in our communities, and that will permit all the professions to practice efficiently with as little inconvenience as possible. Even if we are inconvenienced to some extent, the prestige we will gain from the public for this action will do much to regain for pharmacy that which has been lost.

In some states the board of pharmacy has the power to regulate the sale of drugs. This power, if used judiciously, is very desirable. The board could restrict the sale of certain types of drugs to registered pharmacists only (rather than clerks under their jurisdiction), and likewise, also restrict the compounding of prescriptions to registered pharmacists. It probably would be advantageous for both public and professional welfare if the sale of certain groups of drugs was limited to only registered pharmacists. The

following list is illustrative of the point:

- (a) Drugs and medicines that are likely to deteriorate.
- (b) Drugs and medicines containing opium in any combination.
- (c) All drugs and medicines that are poisonous, habit forming, or deleterious.
- (d) Drugs and medicines having hypnotic properties, barbiturates, chloral, bromides, etc.
- (e) All drugs, medicines and compounds, including proprietaries, not safe for self medication.

The Minnesota board, several months ago, passed a regu-

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latory measure that sulphanilamide and the barbiturates could be sold only by registered pharmacists.

There is no question that, if we took the leadership to strengthen and improve our pharmacy laws and eliminate some of the abuses, the profession would gain much of the good will that we so greatly need. Dr. Swain, as chairman of the American Pharmaceutical Association's Committee for the Modernization of the Pharmacy Laws, has done wonderful work in this field. His tentative draft, which many of you have read and studied, shows that he has given the subject much thought; and if these ideals could be enacted into laws of our many states, pharmacy would be making a great step forward.

You are aware of the fact that any person in most of the states, however ignorant and untrained in the field of public health, can manufacture and sell a medicinal preparation without let or hindrance, whereas the licensed doctor, pharmacist, and dentist, are required to have a college education, preparatory work, and in addition pass an examination. This is certainly an abuse that should be remedied.

In this connection, I note that in the State of New Hampshire an act is being introduced to remedy this abuse relating to the manufacture of drugs, medicines, toilet articles, dentrifices, and cosmetics, which reads as follows:

"No drugs, medicines, toilet articles, dentrifices, or cosmetics shall be manufactured, made, produced, packed, or prepared within this state, except under the personal and immediate supervision of a registered pharmacist or such other person as may be approved by the Commission of Pharmacy and Practical Chemistry, after an investigation and determination by the Commission that such are qualified by scientific or technical training or experience to perform such duties as may be necessary to protect the public health and safety. No person shall manufacture, make, produce, pack, package, or prepare any such articles without first obtaining a permit so to do from the Commission. Such permit shall be subject to such rules and regulations, with respect to equipment, as the said Commission may from time to time prescribe for the protection of the public health and safety."

The following states, Virginia, Maryland, and Texas now have such a law.

We have another group to which we should give some thought. That is the peddler, hawker, itinerant vendor, or house to house canvasser. Stricter supervision and regulation should be given these people. A permit to operate should be issued by the board of pharmacy and such vendors should be allowed to distribute only such preparations as the board may designate.

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For some reason or other, most pharmacy laws do not give a definition for the term "patent and proprietary medicines", and often where a definition is given it is generally so vague, or inconsistent with other provisions of the law that it is of little value. The basis for determining where the sale of these preparations should be permitted is the medicinal character of the preparation, and the purpose for which it is sold, not the form in which, or the name under which it is placed on the market, or whether it is or is not in the United States Pharmacopæia or the National Formulary. If any article is sold for medicinal use (not for industrial or technical), public health demands that its retail sale should be confined to drug stores only, where such sale can be made under or by a registered pharmacist who is trained in the interest of public health.

After the passage of pharmacy acts, we should endeavor to develop them by careful study, by securing judicial opinions and decisions, and by getting effective enforcement. I note a considerable tendency along this line in several states, namely, Maryland, New Jersey, Wisconsin, North Dakota. The North Dakota Board, with P. H. Costello as Secretary, has gone a long way in eliminating many of the so-called patent and proprietary medicines. I believe, if we study the various rulings relative to the drug and cosmetic act, it will strengthen our hand as far as our pharmacy laws are concerned.

We, in Minnesota, have been most fortunate in the excellent co-operation received from our state attorney general's department. They have understood these abuses in the indiscriminate sale of drugs and medicines, and in consequence we have received opinions relative to the sale of aspirin compounds; "Kreo", a preparation similar to lysol and compound cresol solution; emmenagogue pills; hydrogen peroxide; prophylactics. These opinions have all been favorable to restricting the sale to registered pharmacists. Another opinion has just been received which outlaws the use of the words "laxative", "digestive", and "tonic" in the advertising of any place not a pharmacy.

A campaign to educate the members of the judiciary along an intelligent public health program is very desirable. Also in enforcement it is advantageous to carry on an educational campaign rather than to antagonize different groups, such as, the grocers and the public at large. Smaller fines and suspensions of the same have some advantages, especially during such a period in which we have been advancing this program.

A question which seems to be of special interest to the grocers is, "What is going to be the result in case of the distribution of vitamin products?"

I do not necessarily approve of all the points that I bring out in this paper, but I feel they are points to be brought up for general discussion in a group of this kind.

Mr. Dretzka, Secretary of the Board of Pharmacy of Wisconsin, at the Convention of the American Pharmaceutical Association in Minneapolis, gave this advice to the States, "Sit down and study what you have. Take the golden nuggets of your existing laws and combine these with the splendid additions which have been worked out by this conference and then enforce such a law with courage. Pharmacy in your state will then be on a basis of recovery."

As a guide for discussion I have listed the following:

1. To whom are we going to permit the sale of vitamin products?

2. What position should our boards and the profession of pharmacy take relative to the distribution of drugs, such as, sulphanilamide, aminopyrine, cincophen, benzedrine sulphate and others?

3. Are we too lax in the disciplining of our own profession?

4. Restricting unqualified persons from manufacturing and selling medicinal preparations, etc.

5. To what extent will the new Federal Drug and Cosmetic Act effect the drug business? And what responsibility will it place upon the boards?

Function and Scope of Hospital Pharmacies

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LEWIS E. JARRETT

Director of the Hospital Division, Medical College of Virginia

The hospital pharmacist is one of the most important members of the personnel of a hospital and the pharmacy itself is one of its most important departments. This may seem an exaggeration to you, but coming from a hospital administrator who started his hospital career in this capacity, I am sure you will forgive me if you differ with this statement. I am, however, just as certain of myself in making this statement as any I have ever made, for my experience in this connection has been entirely positive.

The majority of hospital administrators have overlooked this necessary department with its many possibilities. These directors have supplied their institutions with an adequate staff of nurses, interns, anesthetists, dietitians, and other professional workers who have an active and intimate contact with patients, but I am afraid that they have forgotten the man behind the scenes, the pharmacist, whose intelligent attitude towards professionalism and service is necessary for the other professional workers to be successful in the front lines.

THE PHARMACIST—THE ALLY OF THE PHYSICIAN

I believe that the physician universally recognizes the pharmacist as an important ally—a fellow worker with him in the scientific and successful treatment of sick people. Why, then, should not every hospital administrator feel that a competent pharmacist, or at least an adequate pharmaceutical service, of which I shall speak later, should be provided for his institution. I feel that the explanation is that the average hospital administrator has not been educated as to the value of a pharmacist in the hospital and to the service that he may render. I am pleased to say, that due to a new interest on the part of hospital authorities and the various national medical and pharmacy groups, there has been a new interest developed in this field with important advances in the last several years. Let us hope that this

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awakening interest will grow with enthusiasm, and continue the improvement of pharmaceutical service to the patient and to the allied professions in our institutions that have dedicated themselves to the service of the sick.

DIFFERENCE IN PHARMACEUTICAL SERVICE

Did you ever stop to think of the difference in pharmaceutical service received by different individuals? I am sure you would be astounded by the facts that could be presented. Did you ever think of the difference in pharmaceutical service to the patient in the home as compared to the patient in the hospital? Again, I think you would be astounded.

In the majority of states there are rather strict and stringent regulations set up governing the practice of retail pharmacy, but, unfortunately, there are few states which control this practice in hospitals. I wonder how many of you hospital administrators conform to the requirements of your state laws and as a matter of fact I might ask how many of you even know the laws of your states in connection with our subject. For example, how many of you are aware of the restrictions under the Federal Narcotic Act and know whether or not you are conforming to their requirements?

WHAT IS ADEQUATE PHARMACEUTICAL SERVICE?

I do not wish you to think that I am publicly indicting hospital administrators in general, but I am attempting to convince them that it is just as negligent on their part to furnish inadequate pharmaceutical service as it is to have ward maids perform the duties of supervising nurses.

The natural question which must arise in each hospital administrator's mind is what constitutes an adequate pharmaceutical service. My answer would be to employ a qualified pharmacist for full time or part time duty in the hospital or to arrange with a local pharmacy to help serve and direct the pharmaceutical service, seeing that the rules of the state are adhered to and that the patients receive the service to which they are entitled. I know administrators of small hospitals will feel that they cannot afford a full time pharmacist but I hope a program may be worked out showing how they may rely on their neighborhood pharmacy for an adequate setup for their institution.

I have had a lot to say relative to the value and importance of good hospital pharmaceutical service, but I have been speaking only in the abstract. Now for a few moments may I discuss the pharmacist as a professional man and his activities in the hospital pharmacy.

There is an economic side to this question which will, of course, vitally affect every hospital budget. In my opinion, however, a full time pharmacist can be afforded in every hospital of fifty beds or over. You will immediately ask how can the expense of a pharmacist be justified in his services to the hospital. In the first place, I should say by safeguarding the patients, eliminating errors and in protecting the hospital against suits for such errors. This in itself is

rather an important item in any institution.

In addition, he can manufacture a large number of official preparations for use at a considerable saving over wholesale prices for these same preparations. He can and should prepare all sterile solutions for injections and certain ampules may be prepared in a modern and well equipped hospital pharmacy. He can help develop a formulary for the hospital which will eliminate a large inventory being required and will reduce the cost of drugs in this manner. He can purchase wisely and at a great saving by purchasing official drugs instead of the highly advertised proprietary prep-For example, he can purchase sulfanilamide for 17 cents per ounce in comparison with prontylin for 63 cents per ounce; phenobarbital at 37 cents per ounce in comparison with luminal for \$6.90 per ounce; barbital tablets at \$1.35 per hundred in comparison with veronal tablets at \$3.60 per hundred; theobromin-sodiosalcylate at 25 cents per ounce in comparison with diuretin at \$1.85 per ounce. These comparisons are identical drugs and from the difference in prices, you, who are using the proprietary ones, can see what a large amount of money you are paying for advertising. Then, too, your pharmacist can manufacture household necessities such as floor wax, liquid soap, furniture polish, metal polish, tooth paste, and numerous similar items at a considerable saving to the hospital. I believe that if each of you would study how much money could be saved just by doing the things mentioned in this paragraph, you would feel that a full time pharmacist would be justified without further facts or figures. I must go further, however, to give you even more convincing facts.

There should be defined in every hospital a rational drug

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therapy and I cannot see how it would ever be possible to do this without the services of a pharmacist. This is highly important and yet I imagine it has escaped the attention of a large percentage of the hospital administrators.

EDUCATIONAL VALUE OF THE PHARMACIST

There is a distinct educational value connected with the problem with which we are dealing and here again the pharmacist can be of inestimable value. The average medical graduate who is interning knows very little about prescription-writing and this fact in a large way accounts for the tremendous number of proprietaries that are being prescribed. It seems to me that here is offered a wide opportunity for the pharmacist to be of great service to the young intern in teaching him prescription writing. As a matter of fact, he can usually be of value to many of the older members of the staff as well. There is also furnished a rare opportunity for mutual confidence to be developed between physician and pharmacist on perhaps a better level than any other field of pharmaceutical practice. The pharmacist can also be given the responsibility of teaching nurses in simple pharmaceutical operations. This would be of value to them in their work on the wards as well as to give them an insight into materia medica which always seems so difficult for them to grasp. It might even be suggested that this pharmacist actually teaches materia medica to nurses.

The pharmacist with his background and education may develop so that he can be placed in a number of useful positions. With his knowledge of the intelligent purchase of drugs he should be a very valuable man in the buying of general sick room supplies and as a matter of fact could develop into a satisfactory general purchasing agent. He might develop administratively to an important position in the hospital. I know of one pharmacist of a fairly large hospital who has complete charge of the out-patient department. Considering the education and professional outlook of the pharmacist, it seems to me that it is an important suggestion which should not be taken too lightly.

RESPONSIBILITY OF THE HOSPITAL ADMINISTRATOR TOWARD THE PHARMACEUTICAL SERVICE

In this brief discussion I have tried to convince you that there is a definite place in every hospital for a competent

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pharmacist, or at least for adequate pharmaceutical service. I am sure all the reasons given for this need are valid. If for no other reason, the angle of economics should appeal to each of you. To my mind, however, hospital administrators should give consideration to this question from the angle of service to the patient. We have pledged ourselves in formulating hospital policies and directing our hospitals to give the best service possible to those entrusted to our carewe have pledged ourselves to have our hospitals maintained on a high scientific plane in keeping with similar institutions and we have pledged ourselves to furnish to the physicians working in our institutions a high type accurate service in every department. To do this, it seems to me imperative to maintain a pharmaceutical service to fill all of the needs in keeping with the other professional departments of the hospital.

Pharmacy as a Basis for Science Teachers

E. O. LEONARD and E. A. SWINYARD College of Pharmacy, University of Idaho

Every school should make an effort to place its graduates in positions for which they are adapted and positions, as far as possible, to the liking of the graduate. Such is the attitude taken by the University of Idaho, College of Pharmacy, and as a result the following incident suggested the possibility that pharmacy as a basis for science teachers might be of interest to other members of the American Association of Colleges of Pharmacy.

One of our students, thinking he might like to teach science in high school, selected our scientific pharmacy curriculum for study and for his electives chose subjects in education that would fulfill all of the requirements for a high school certificate in Idaho.

Upon graduation with a degree in pharmacy and having completed all requirements in education, he made application for a certificate to teach science subjects in Idaho high schools. His application was questioned on the basis that pharmacy was not an adequate preparation for science teachers.

Upon learning that the granting of a certificate was questioned, a study was made of the general requirements for graduation from the eight major colleges of the University of Idaho, namely the colleges of letters and science, pharmacy, agriculture, engineering, forestry, education, business, and law. Several very striking facts were revealed:

- The pharmacy curriculum requires as much English as any of the other seven colleges.
- 2. In the science group (chemistry, botany, geology, physics) the curriculum in pharmacy requires 60 hours, which is more than double any other department with the exception of forestry that requires 32 hours from this group.
- 3. The pharmacy curriculum requires as much work in social science with the exception of the school of business.
- Engineering is the only department requiring more mathematics than the pharmacy curriculum.
- There are three times more hours in bacteriology required in pharmacy than in other curriculums.
- Two years of foreign language is required in pharmacy, while none is required in education and only one year in law and letters and science.
- Fifteen hours of work in public health, physiology, and pharmacology are required of the student in the pharmacy curriculum, and other departments require no work in these important subjects.

Conclusions

After a careful study of this chart, it becomes apparent that a scientific pharmaceutical curriculum makes a splendid background for science teachers in high school, providing they have satisfied all education requirements. It would be to the advantage of the science teacher in high schools and all elementary teachers in general if they would follow the pace set by the pharmacy schools and require work in physiology, public health, and related subjects. Graduates in pharmacy have double the training that is required of education majors in the so-called science subjects.

It is interesting to note that when the above was called to the attention of the department of education the above mentioned certificate was granted. A similar condition arose in a neighboring state which later gave the opinion that, "Pharmacy is a splendid basis for science teachers."

Emphasizing The Profession¹

RALPH BIENFANG University of Oklahoma

Over a period comprising approximately the past three years, the writer has at different times come forward with suggestions which had for their purpose the focusing of attention on the registered man, and thereby emphasizing the profession of pharmacy to the American public. It is his desire then at this time to reiterate certain of these, and to elaborate upon them. At no time has the writer ever felt that all of these suggestions should necessarily be adopted. To do so might result in overdoing the thing. But it does appear that one or several of these ideas might be followed, to a distinct advantage to the registered man, and through him to pharmacy both in its professional and commercial aspects.

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First of all I think that a title for the registered man is both deserved and desirable. The one that I have suggested for national use is "Pharmacist". The matter of a title is not to be confused with the matter of degrees granted by schools and colleges. Irrespective of the degrees attained, it seems logical that men admitted by state examination to the practice of the profession of pharmacy should have a uniform and distinctive title. This as I have mentioned without any particular originality could be "Pharmacist", and take its stand along with other respected titles such as

attorney, reverend, doctor, etc.

Lately I have noticed in the pharmaceutical press, increased reference to men engaged in pharmacy as pharmacists. Sometimes the reference is in apposition to the man's name. Obviously then the transition could easily be made in pharmaceutical journalism, using this designation as a title by placing it before the registered man's name instead of after it. Drug Topics and the American Druggist are now doing this to a limited extent. It could probably be even more conveniently done through the use of the abbreviation "Phm". This abbreviation I have already frequently used in correspondence. At this stage then, it appears to be just a matter of whether registered men wish to be known by this

¹Read before the 1939 meeting of District No. 6, Oklahoma City.

title. Its equivalent has long been in use by pharmacists in South American countries.

My earliest suggestion with respect to spotlighting the registered man was that he wear a distinctive professional coat. This I suggested to be olive green since that has been the color emblematic of pharmacy since medieval times. On various occasions I attempted to get samples of olive green cloth suitable for this purpose, but though I tried in a number of metropolitan centers, I was unsuccessful for a long time in getting a sample that was truly olive green. From this it appears that should olive green be adopted it would be distinctive also because of the difficulty in obtaining this shade of cloth through the regular channels. Recently, however, I have found this shade in a poplin and have had a sample jacket made. Through the wearing of such a coat by the registered man, strangers would know immediately whom to approach with a prescription or whom to ask a question requiring a professional answer, and it seems to the writer that dignity would accrue to the wearer. Whether by accident or design several color ads of the Pepsodent Company have shown the pharmacist wearing what appears to be an olive green coat. On writing the Company I was told, "_the color was chosen by the artist because it made a more attractive picture in those particular ads. We agree with you that the effect is very pleasing."

In connection with the suggested professional jacket, I have more recently given voice to the possibility of a suitable markings on the breast pocket to indicate the number of years registration. An olive green equilateral cross for the first five years, a silver cross for five to ten years, a gold cross for ten to twenty-five years, a royal purple cross for twenty-five to fifty years, and a white or ivory cross probably edged with gold, for fifty years and up. Markings of a similar nature have long been used in other fields, and it might be that the adoption of modest markings by registered men would be to their advantage, and to the advantage of the profession.

Another suggestion that I would like to make is this: Why not a shingle for the registered man? As far as I know the registered pharmacist is the only professional man who does not have a shingle. Possibly it may be thought that the public can assume by the presence of the registered

man in the drug store that he practices the profession of pharmacy. Is it not more forceful to tell them about it by means of a shingle, since all of his endeavor is not necessarily professional? If we want respect for the profession of pharmacy, and all of us do, we must command it. I believe that a professional shingle for the registered man will go a

long way toward accomplishing this end.

In keeping then with the original suggestion with regard to a title, the registered man could hang out a shingle bearing on it "Pharmacist John Doe", or abbreviated "Phm. John Doe". The title, of course, indicates the general field, and below could be placed the registered man's specialties. One engaged in retail pharmacy could rightly call himself a "Prescriptionist", and if it were desired to add another specialty, "Laboratory Technician", or "Public Analyst" could be included. The shingle could be of wood or metal, with the usual gold letters on a black background, or it could be in gold leaf, low down, and near the door on one of the show windows; in either place reading something like this:

Phm. John Doe Prescriptionist & Laboratory Technician

or

Richard Roe, B.S. in Phar.
Pharmacist &
Public Analyst

It is here also suggested that a listing of the store's registered men, together with their respective titles or degrees, be included on the prescription labels and on the store's letter heads.

In order that the writer might have guidance in future endeavors with respect to emphasizing the registered man, and through him, the profession of pharmacy to the American people, he desires that you communicate with him concerning results you have observed from the employment of these or similar ideas, or of your opinion of these suggestions and of the possibility of their adoption by registered men.

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Are Pharmacy Schools under the Four Year Curriculum Obtaining An Improved Type of Student¹ A Statistical Study

ROBERT J. WHERRY and HENRY M. BURLAGE University of North Carolina

The four year course only has been recognized since 1932 by the member colleges of the American Association of Colleges of Pharmacy although before this time a number of schools had already discarded the short courses. Therefore, since this advanced curriculum requirement has been in force only three classes have graduated and these include such a small proportion of the total number of registered pharmacists of the nation that their influence as better prepared pharmacists has probably been but little felt; at least, not to the extent as to eliminate or overshadow those individuals who, shortsightedly or otherwise, question the value or wisdom of the increased requirements.

This study was undertaken to ascertain if, as a result of increased curricular requirements, the schools were attracting and graduating individuals of a higher scholastic attainment than those which attended the short courses previously in force. Since four years of high school for entrance to member colleges of the Association was required for the first time in 1923, classes entering before this date were not examined.

Eight colleges were asked to cooperate in the undertaking and were selected because of their willingness to furnish the desired information and also on the basis of other factors which are enumerated as follows:

- (a) Geographical Location: Two on the Pacific Coast; one in the Rocky Mountain area; one in the far west; two in the middle west and two in the southeastern area.
- (b) Connections: Six schools are a part of state institutions of higher learning; two are connected with independent institutions.
- (c) Urban Locations: Five are located in comparatively small university communities; three in cities of 75,000 or more
- (d) Size of Enrollment: Five schools might be classed as

A study project of the Committee on Problems and Plans.

those with an average enrollment; two with a small registration; one with a large student body.

The information requested from the colleges included:

(1) The scholastic averages of the students that entered in 1923 and completed the two-year course (1200 clock hours, at least 500 of which is didactic) in 1925; of those that entered in 1930 and completed the three-year course (2250 hours of which 1000 hours shall be didactic) in 1933; and of those that entered in 1932 and graduated from the first four-year course (3000 of which 1200 hours shall be didactic and 1500 hours devoted to laboratory work) in 1936; and of those entering in 1933 and finishing in 1937.

(2) If available the freshman orientation averages for

the individuals studied in (1).

- (3) If available, the averages made by these students on the state board of pharmacy examinations.
- (4) If obtainable the number of persons in each group making the so-called "Honor Rolls," "Dean's Lists," etc., and the frequencies wherein these honors were obtained.

(5) Those persons making honor societies such as Rho Chi, Phi Beta Kappa, etc.

In (1) the classes were selected as representing the last fully organized class allowed to enter or pursue the two- or three-year course in pharmacy and the first and second classes graduating under the four-year requirement.

Orientation averages were not generally available and those submitted were quite incomplete and were, therefore,

not considered in this study.

- (1) Three of the eight schools submitted averages made on the board examinations.
- (2) Only five of the eight schools offered the two-year course.
- (3) Seven of the eight colleges offered the three-year plan of study.

(4) One school reported on three four-year classes.

(5) Five of the eight schools reported the numbers in each class receiving various honors.

Little comparison can be made in regard to (5) since pharmacy students in most cases were not eligible to such honors under the short courses. However the numbers receiving honors for scholastic effort as reported might be of interest.

SCHOOL	1930-	33	193	32-6	1933-7		
1	Honors 1-1 qr.	Rho Chi	Honors 1-1 qr.	Rho Chi	4-1 qr.	no Chi	
	1-2 qr.		1-2 qr.		1-2 qr. 1-3 qr.		
					1-4 qr. 1-4 qr.		
11	(1930-4)				1-4 sem. 1-Phi Beta F	Cappa	
III	2-1 yr. 1-2 yr. 1-3 yr.		1-4 yr.		1-4 yr. 1-2 yr. 1-3 yr.		
VI			24		1-Phi Sigma 3-Phi Kappa		
VII					1 grad. with honors 4 grad. with honors	high	
VIII				5		3	

Note: qr. = quarter(s); sem. = semester(s); yr. = year(s).

In general it would appear that a greater number of students are actually receiving honors and recognition for what might be construed a greater scholastic attainment, hence mental calibre, under the four-year curriculum.

On the basis of the data received it was early observed that any simple comparison of the grade averages was not feasible, reliable, or practicable but that a statistical study of the available data was necessary in order to eliminate or minimize the effects of factors in the individual schools such as variations in examinations and grading by instructors, changes in staff and board personnel, increased rigidity in curricular requirements and standards, etc.

STATISTICAL TREATMENT AND ANALYSIS

Since grading standards undoubtedly vary from institution to institution as to average level of grading and with respect to the variability or spread of grades given and since these same differences might be presumed to exist between the institutions and the state boards, it was deemed advisable to eliminate or minimize these differences before comparing groups. The grades for each school and those made on the board examinations were, therefore, made comparable as to level and variability by reducing the grades in each unit (school or board) for the entire period covered by a study of the Standard Scores (Z) (Table I). This means that the average grade for the period covered was made equal to zero and that the Standard Deviation (S. D.), the measure of variability, was made equal to unity for each unit in the study (Table III). The values are found by the following formulas:

Standard Score
$$(Z) = \frac{x}{S.D.X}$$
; $x = X - Mx$ where (X) is the

average grade of the individuals and MX, the mean average

grade =
$$\frac{\sum X}{N}$$
, N = the number of individuals.

Standard Deviation (S. D.) =
$$\sqrt{\frac{\sum x^2}{N}}$$
 (Table III.)

This transformation of grades was based on the assumption that the grading system remained comparable within each unit from year to year. That this assumption is unlikely to be entirely true is evident when one considers changes in personnel in the schools and on the boards. It was felt that this assumption was nearer true than was the alternative one that there were equal standards from unit to unit and this latter assumption would have been tacitly made had there been no transformation of the grades to standard scores.

Two lines of statistical analyses were pursued in an attempt to search out trends in the data available. The first approach was through a study of the Critical Ratios and resulting probabilities as to the significance of the differences between the means. Groups from the curricula of different lengths were compared on the basis of school and state board grades.

Means
$$(M = \frac{\sum Z}{\sum N})$$
 were calculated (Table II) for the

two groups to be compared and the Standard Deviation of

TABLE I. NUMBER OF STUDENTS ON THE BASIS OF STANDARD SCORES (Z).

IADL	Course	-3,000	-2.000	-1.001	±0.000	+1.001	+2.001	(4).
School		to	to	to	to	to	to	N
	years	-2.001	-1.001	± 0.000	+1.000	+2.000	+3.000	
I	2	1	6	14	9	4	0	34
	3	0	3	6	3	3	0	15
	4	0	0	6	1	1	1	9
	4	0	1	11	5	5	0	22
I	2	1	3	13	10	8	0	35
State	3	0	5	5	4	1	0	15
Board	4	0	2	3	3	1	0	9
	4	0	3	5	8	9	0	25
II	3	0	0	5	2	0	0	7
	4	0	0	3	3	0	1	7
	4	0	0	3	2	0	1	6
111	2	0	1	2	1	1	0	5
	4	0	2	4	7	1	1	15
	4	0	0	3	1	1	0	5
	4	0	2	1	3	0	0	6
III	2	0	0	3	0	2	0	5
State	4	0	6	5	3	1	0	15
Board	4	0	1	2	2	2	0	7
	4	0	0	1	1	1	0	3
IV	3	0	- 1	2	0	0	0	3
	4	0	0	1	1	0	0	2
	4	0	0	3	3	1	1	7
v	2	0	4	10	3	0	2	19
	3	0	0	11	6	1	2	20
	4	0	1	1	0	0	0	2
	4	0	0	2	3	1	0	6
VI	2	0	0	1	0	1	0	2
	3	0	2	7	0	2	0	11
	4	1	1	10	3	4	0	19
	4	0	0	7	7	5	0	19
VI	2	0	0	1	0	1	0	2
State	3	0	6	3	2	0	0	11
Board	4	0	5	6	3	3	0	17
	4	0	0	1	8	10	0	19
VII	2	0	17	33	27	14	1	92
	3	0	14	30	15	9	2	70
	4	0	0	12	10	6	2	30
	4	0	12	28	9	7	1	57
VIII	3	0	1	0	1	1	0	3
	4	0	2	4	6	0	1	13
	4		2	3	2	2	0	9

TABLE II. MEANS OF THE AVERAGE STUDENT GRADES IN EACH CURRICULUM AND THE DIFFERENCES OF THESE MEANS.

School	Curricu lum Mean			ND THE	DIFFERE	ENCES OF	THESE !	MEANS.	
	No.	Y		M_1 - M_2	M_1-M_3	M_2 - M_4	M_2 - M_3	M_2 - M_4	M ₃ -M ₄
1	M_1	2.	.98	+0.07	+0.26	+0.25	+0.19	+0.18	-0.01
	M_2	2.	91						
	M_3	2.	72						
	M_4	2.	73						
1	M_1	86.	05	+3.22	+1.77	-2.27	-1.93	5.38	-3.44
State	M_2	82.	93						
Board	M_3	84.	88						
	M_4	88.	32						
II	M_2	1.3	39	********	********	*********	-0.33	-0.23	+0.10
	M_3	1.	72						
	M_4	1.0	62						
III	M_2	77.8	81	-2.42	-1.44	-1.37	+1.00	+2.07	+1.07
	M_3	80.2	23						
	M_4	79.2	25						
	$M_4(2)$	78.	18						
III	M_2	83.2	20	+3.77	+1.56	+0.60	-2.21	-3.17	0.96
State	M_3	79.4	13						
Board	M_4	81.6	64						
	$M_4(2)$	82.	60						
IV	M_2	1.2	24	*******	********	*********	-0.47	-0.38	-0.09
	M_3	1.7	71						
	M_4	1.6	52						
V	M_1	1.2	27	-0.15	+0.22	-0.31	+0.37	-0.16	-0.43
	\mathbf{M}_2	1.4	12						
	M_3	1.0)5						
	M_4	1.5	8						
VI	M ₁	84.5	0	+2.90	+0.50	-1.00	-2.40	-3.90	-1.50
	M_2	81.6	0						
	M_3	84.0							
	M_4	85.5	0						
VI	M_1	85.0		+8.00	+3.80	-3.30	-4.20	-11.30	-7.10
State	\mathbf{M}_2	77.0	0						
Board	M_3	81.2							
	M_4	88.3	0						
VII	M ₁	80.0	7	-0.09	-2.35	-0.19	-2.26	-0.07	+2.19
	M_2	80.1	6						
		82.4	2						
	M ₄	80.2	3						
VIII	M_2	81.69	9	000000000	0000048888	*****	-1.65	-2.38	-0.73
	-	83.3						_,_,	
		CO.C.	*						

TABLE III. COMPARISON OF STANDARD DEVIATIONS BASED ON GRADES, THE STANDARD SCORES OF THE DIFFERENCES AND THE CRITICAL RATIOS, CORRELATION COEFFICIENTS AND THEIR CRITICAL RATIOS.

School	Course in Years	Standard Deviation	Standard Deviation Differences: S.D. diff.	Critical Ratio Diff. S. D. Diff.	Correlation Conflictent Say F = N6x 6y	5. D. of Cerr. Ceeff. VN - 1	Critical Ratio
I	2	0.37	0.17	+0.47	+0.2436	+0.1058	+2.302
			0.23	$+1.13 (I_a)$			
			0.17	$+1.47 (I_b)$			
	3	0.63	0.26	+0.77 (I _{a1})			
	4	0.62	0.21	$+0.86 (I_{b1})$			
	4	0.64	0.25	-0.40			
I	2	4.00	1.59	+2.03	+0.1264	+0.1080	+1.171
State			1.64	$+0.71 (I_a)$,
Board			1.35	-1.69 (Ib)			
	3	5.60	2.08	-0.93 (I _{a1})			
	4	4.50	1.86	-2.89 (Ib1)			
	4	5.83	1.90	-1.81			
II	3	0.32	0.24	—1.37 (II ₀)	+0.2938	+0.2096	+1.402
	4	0.55	0.27	-0.85 (IIb)			,
	4	0.58	0.31	+0.32			
III	2	6.09	2.86	-0.85 (III _a)	+0.0444	+0.1793	+0.248
			3.29	$-0.44 \text{ (III}_b)$			
	4	3.77	3.33	$-0.41 \; (III_c)$			
			2.14	+0.47 (III _{a1})			
	4	5.03	2.19	+0.95 (III _{b1})			
	4	4.81	2.73	+0.39 (III _{c1})			
III	2	6.36	3.04	+1.24 (IIIa)	-0.1559	+0.1781	-0.875
State			3.39	+0.46 (III _b)			
Board	4	4.05	3.30	+0.19 (III _c)			
			2.10	-1.05 (III _{a1})			
	4	4.82	1.96	$-1.62 (III_{b_1})$			
	4	2.88	2.47	$-0.39 \text{ (III}_{\sigma_1})$			
IV	3	0.34	0.30	-0.15 (IVa)	+0.4610	+0.1806	+2.553
	4	0.40	0.28	-0.14 (IVb)			
	4	0.52	0.30	+0.03			
V	2	0.42	0.14	-1.07	+0.1619	+0.1420	+1.140
			0.27	$+0.89 (V_a)$			
			0.22	$-1.41 (V_b)$			
	3	0.50	0.28	$+1.32~(V_{a1})$			
	4	0.36	0.23	$-0.69 \text{ (V}_{b_1})$			
	4	0.44	0.32	-1.34			

School	Course in Years	Standard Deviation	Standard Devlation Differences: S.D. diff.	Critical Ratio	Correlation Coefficient Xxy N6x 6y	S. D. of Corr. Coeff. VN - 1	Critical Ratio
VI	2	5.51	4.32	+0.69	+0.0951	+0.1401	+0.679
			3.97	+0.13 (VIa)			
	3	5.46	$\frac{2.46}{1.82}$	$-0.40 \text{ (VI}_b)$ $-1.32 \text{ (VI}_{a1})$			
	4	3.40	1.89	$-2.07 \text{ (VI}_{b1})$			
	4	4.05	1.21	-1.24			
VI	2	3.52	3.40	+2.35	+0.2965	+0.1317	+2.252
State			2.61	$+1.46 (VI_a)$			
Board			2.86	$-1.19 (VI_b)$			
	3	7.68	2.44	$-1.73 \text{ (VI}_{a1})$			
	4	3.23	2.71	$-4.17 \text{ (VI}_{b_1})$			
	4	6.12	1.16	-4.41			
VII	2	5.27	0.67	-0.13	+0.0362	+0.0635	+0.570
			0.96	-2.45 (VII _a)			
			0.79	-0.24 (VII _b)			
	3	3.09	0.87	-2.59 (VII _{a1})			
	4	4.29	0.67	$-0.10 \text{ (VII}_{b1})$			
	4	4.25	0.96	+2.28			
VIII	3	2.50	1.77	-0.94 (VIIIa)	0.0385	+0.2038	-0.1889
	4	3.70	2.56	$-0.93 \text{ (VIII}_b)$			
	4	3.65	2.35	-0.31			

their difference (Table II) found on the basis of their individual Standard Deviations (S. D. = $\sqrt{\frac{\sum x^2}{N}}$ by means of the formula, Standard Deviation of their difference, S. D.

$$V = \frac{\text{S. D.}_{2}^{2}}{\text{N}_{1}} + \frac{\text{S. D.}_{2}^{1}}{\text{N}_{2}}$$

(Table III.)

The Critical Ratios, standard scores of the differences, were then determined by the formula,

rmined by the formula,

Critical Ratio =
$$\frac{(M_1 - M_2)}{S. D.}$$
diff.

and the probabilities that these differences were really significant were then read from an ordinary table for area under the normal curve. The trend for the study as a whole was

then arrived at by finding the average of these probabilities. (Tables IV, V, VI).

The second line of attack was that of Correlation Analysis. Pearsonian product-moment Correlation Coefficients were computed for each school between the length of the curriculum on the one hand and (1) school grades and (2) board grades. These were computed by the formula,

r (Pearsonian Cor-
x y relation =
$$V \frac{N\Sigma x'y' - \Sigma x'\Sigma y'}{[N\Sigma x'^2 - (\Sigma x')^2][N\Sigma y'^2 - (\Sigma y')^2]}$$

and the Standard Deviations of the correlation coefficients $(1-r^2)$

were then obtained for the formula, S. D. =
$$\frac{(1-r^2)}{\sqrt{N}}$$

and their Critical Ratios determined by the formula,

Critical Ratio =
$$\frac{r}{S. D.r}$$

Probabilities were again calculated showing the likelihood that actual improvement had been made, i. e., that the correlations were not due to chance.

The results of the first of these analyses are given in Tables IV and V. While the results are in no case conclusive—otherwise the probabilities would all have been equal to 1.000, indicating certainty—the results on the whole do indicate that some slight improvement has taken place, especially with respect to the four-year curriculum as compared with the three-year group and in the second four-year group as compared to the first four-year group. While the tendency was slightly noticeable in the school grades (p 4>3=0.724*, p 4>41=0.479) (Table IV), it was disclosed even more plainly with regard to the state board grades (p 4>3=0.945, p 4>41=0.889) (Table V).

When the two-year group, however, is compared with the three- and four-year groups, the results are not so comforting. Here the school grades show microscopic changes probably highly unreliable (p 4>2=0.557, p 3>2=0.483) (Table IV), but the state board grades indicate the reverse,

^{*}p 4 > 3 to be read as the probability that the four-year group excelled the three-year group. These values are taken from Tables IV and V.

TABLE IV. COMPARISON OF VARIOUS LENGTHS OF CURRICULA BASED UPON SCHOOL GRADES.

Two Yee	r vs. Three	Year Curric	rula.	Critical	
School	Ratio	p*3>2	School	Ratio	p 3>2
		• •			-
I	0.47	0.319	VI	0.69	0.212
11	+1.07	0.857	VII	+0.13	0.552
				Average	= 0.483
Two Yea	r vs. Four Y	- res - miner a service	a.		
		p 4>2			p 4>2
I_a	1.13	0.129	Va	+1.41	0.921
Ib	-1.47	0.071	VI_a	-0.13	0.448
IIIa	+0.85	0.802	VIb	+0.40	0.655
III	+0.44	0.670	VII_a	+2.45	0.993
III_c	+0.41	0.659	VII	+0.24	0.595
V_{σ}	-0.89	0.187		Average	= 0.557
Three V	ar vs. Four	Vear Currie	ula		
I nice I	wi va. rour	p 4>3	iciu.		p 4>3
I _{a1}	-0.77	0.221	V_{b_1}	+0.69	0.755
_		0.195	$VI_{\sigma 1}$	+1.32	0.907
I_{b_1}	-0.86	VILLEY			
Ib1 IIa	$-0.86 \\ +1.37$	0.915	VIb1	+2.07	0.981
		0.000.00	VI _{b1} VII _{a1}	$^{+2.07}_{+2.59}$	0.981 0.995
Π_a	+1.37	0.915		4	
IIa IIb	$^{+1.37}_{+0.85}$	$0.915 \\ 0.802$	VIIa1	+2.59	0.995
IIa IIb IVa	$^{+1.37}_{+0.85}_{+0.15}$	0.915 0.802 0.560	VII _{a1} VII _{b1}	$+2.59 \\ +0.10$	$0.995 \\ 0.540$
II _a II _b IV _a IV _b	+1.37 +0.85 +0.15 +0.14	0.915 0.802 0.560 0.556	VII_{a_1} VII_{b_1} $VIII_a$	$+2.59 \\ +0.10 \\ +0.94$	0.995 0.540 0.826 0.824
IIa IIb IVa IVb Vai	+1.37 $+0.85$ $+0.15$ $+0.14$ -0.13	0.915 0.802 0.560 0.556 0.093	VIIa1 VIIb1 VIIIa VIIIb	$+2.59 \\ +0.10 \\ +0.94 \\ +0.93$	0.995 0.540 0.826 0.824
IIa IIb IVa IVb Vai	+1.37 +0.85 +0.15 +0.14	0.915 0.802 0.560 0.556 0.093	VIIa1 VIIb1 VIIIa VIIIb	$+2.59 \\ +0.10 \\ +0.94 \\ +0.93$	$0.995 \\ 0.540 \\ 0.826 \\ 0.824 \\ = 0.724$
IIa IIb IVa IVb Vai	+1.37 $+0.85$ $+0.15$ $+0.14$ -0.13	0.915 0.802 0.560 0.556 0.093	VIIa1 VIIb1 VIIIa VIIIb	$+2.59 \\ +0.10 \\ +0.94 \\ +0.93$	0.995 0.540 0.826 0.824
IIa IIb IVa IVb Va1	+1.37 +0.85 +0.15 +0.14 -0.13	0.915 0.802 0.560 0.556 0.093	VIIa1 VIIb1 VIIIa VIIIb	+2.59 +0.10 +0.94 +0.93 Average	$0.995 \\ 0.540 \\ 0.826 \\ 0.824 \\ = 0.724$ $p 4i>4e$
IIa IIb IVa IVb Va1	+1.37 +0.85 +0.15 +0.14 -0.13 ur vs. Four Y	0.915 0.802 0.560 0.556 0.093 Fear Curricu p $4_1 > 4_e$ 0.655	VIIa1 VIIb1 VIIIa VIIIb	+2.59 +0.10 +0.94 +0.93 Average	$0.995 \\ 0.540 \\ 0.826 \\ 0.824 \\ = 0.724$ $p 4_1 > 4_0$ 0.488
IIa IIb IVa IVb Va1	+1.37 +0.85 +0.15 +0.14 -0.13 ur vs. Four Y	0.915 0.802 0.560 0.556 0.093 Fear Curricu p $4_1 > 4_e$ 0.655 0.374	VII a1 VII b1 VIII a VIII b	+2.59 +0.10 +0.94 +0.93 Average	$0.995 \\ 0.540 \\ 0.826 \\ 0.824 \\ = 0.724$ $p 4_{1}>4_{0}$ $0.488 \\ 0.910$
IIa IIb IVa IVb Va1 Four Yea	+1.37 +0.85 +0.15 +0.14 -0.13 ar vs. Four Y +0.40 -0.32 -0.47	0.915 0.802 0.560 0.556 0.093 Fear Curricu p $4i > 4e$ 0.655 0.374 0.319	VIIa1 VIIIa VIIIa VIIIb VIIIb VIIIb	+2.59 +0.10 +0.94 +0.93 Average -0.03 +1.34 +1.24	$0.995 \\ 0.540 \\ 0.826 \\ 0.824 \\ = 0.724$ $p 4_1 > 4_0$ $0.488 \\ 0.910 \\ 0.892$

^{*}Here and in Table V py>x means the probability that group y actually showed some improvement over group x. When the value of p is less than .500 it indicates actual superiority of the second named group.

TABLE V. A COMPARISON OF VARIOUS LENGTHS OF CURRICULA BASED UPON STATE BOARD GRADES.

Two Year	r vs. Three 1	ear Curricu	lum.		
School	Critical Ratio	p 3>2	School	Critical Ratio	p 3>2
I	-2.03	0.021	VI	-2.35 Average	0.009 $= 0.015$

Two Yea	ir vs. Three	Year Currice p 4>2	ıla.		p 4>2
Ia	-0.71	0.239	IIIo	-0.19	0.425
Ib	+1.69	0.954	VIa	-1.46	0.072
III_a	-1.24	0.108	VIb	+1.19	0.883
III	-0.46	0.323		Average	= 0.429
Three Y	ear vs. Four	Year Currice p 4>3	ula.		p 4>3
I _{a1}	+0.93	0.824	VI_{a_1}	+1.73	0.958
I_{b_1}	+2.89	0.998	VIb1	+4.17	1.000
				Average	= 0.945
Four Yea	ar vs. Four Y	ear Curricul	um.		
		p 41>4e			p 41>4
I	+1.81	0.965	IIIbi	+1.62	0.947
III_{σ_1}	+0.39	0.652	VI	+4.41	1.000
				Average	= 0.889

TABLE VI. CORRELATION ANALYSIS: LENGTH OF CURRICULUM VS. GRADES.

School	School r x, y,	8, D.r	Gritleal Ratio	Probability of Improvement	Board r X, y,	 	Critical Ratio	Probability of Improvement
I	0.2436	0.1508	2.302	0.989	0.1264	0.1080	1.171	0.879
II	0.2938	0.2096	1.402	0.919				
III	0.0444	0.1793	0.248	0.599	-0.1559	0.1781	-0.875	0.189
IV	0.4610	0.1806	2.553	0.995				
V	0.1619	0.1420	1.140	0.873				
VI	0.0951	0.1401	0.678	0.752	0.2965	0.1317	2.252	0.988
VII	0.0362	0.0635	0.570	0.716				
VIII	-0.0385	0.2038 -	-0.189	0.425				
		Ave	rage =	0.781		A	verage =	0.685

again showing a microscopic gain for the four-year curriculum as compared with the two-year group (p 4>2=0.429, Table V), indicating less than an even wager for improvement and alarmingly less when the three-year group is compared with the two-year one (p 3>2=0.015, Table V), indicating that practically no credence can be put in the concept of improvement.

Perhaps, however, this situation is an artifact. It will be recalled that these comparisons are based upon an assumption that the grades within each unit of the study (school and board) had remained constant during the span covered by this survey. Now let us suppose instead that when the curriculum was lengthened the state board examinations were made much harder or that the grading became much more thorough. If this were true then our assumption of equality was erroneous and has penalized the later groups to the benefit of the two-year group, and might be sufficient to explain away the adverse findings above. A further explanation might lie in the fact that students in the shorter curricula were trained to "spot" board examinations whereas in the later one the students are not so trained and the examiners and examinations of the boards are not keeping pace with modern trends of examinations.

Another explanation might lie in a possible selection factor, not of entrance but of completion. The schools knowing that this was the last year that persons could qualify on the basis of two years of work may have tended to hold back a larger percentage of less able individuals on the theory that they would greatly profit by another year's work. Also the reverse might have been true, whereby the schools felt that since this was the last group under the short course it would be advisable to give higher marks in order to dispose of them as soon as possible. From the student side selection might have also occurred in that able students who did not want to take longer training were able to meet the deadline by carrying extra work, attending summer schools, etc., while their less able fellow students were unable to do so. If any or all of these influences were at work, it might follow that, while our figures are accurate in showing that the two-year group included in this study was actually superior to the longer curriculum groups studied, our findings would not apply to two-year groups in general since they would not be subject to the same motivating factors. Or to state the situation somewhat differently, there is no question that the groups entering in 1923 and 1930 were large ones consisting of individuals seeking to get by under the lesser requirements of graduation; hence the opportunities for selection were greater or more might have been eliminated as undesirable.

Other factors which cannot be eliminated and which might influence results to microscopic changes only are (1) in sev-

eral instances the effect of data from a small class is indicated (Schools II and IV especially); (2) also the classes of 1923-5 and 1930-3 pursued curricula that had been fairly well established whereas the two four-year courses involved being newly constructed, were subject to experimental changes which might not have been conducive to the best teaching and student interest; and (3) no curricula between schools has been standardized and some of the influences shown might tend to be eliminated by such a standardization; this is especially important in the standardization of board examinations.

The second line of statistical analysis, the correlation approach, discloses much the same conditions as indicated by Table VI. Here the probabilities from both sections of the study show that improvement has occurred. The average probability of improved selection was 0.781 for the study involving school grades while that from the state board study was 0.685, the lower figure in the latter case again being accountable in terms of the same explanation presented above.

It is concluded, therefore, that statistical analyses disclose a slight trend in the direction of improvement. The results are, however, not certain, as indicated by the fact that the probabilities do not become certainties, i.e., when they are equivalent to unity. Possible explanations of the few adverse findings have been offered.

In closing the statistical discussion it seems advisable to reopen the question of the criterion or criteria of improvement. In this study two such measures have been used, i. e., school grades and board grades. That these have remained constant from year to year has been questioned in the above discussion and that they even measure the same thing is open to question. In the case of schools I. III, and VI, data is available from both sources. Correlations between board and school grades for 79, 30, and 48 students yielded values of 0.557, 0.298, and 0.534 respectively for the three schools. These values are no higher than that to be expected between a good intelligence test and school grades for schools I and VI and much lower for school III. This would seem to indicate that one or both of these measures must be badly missing the mark. It would, therefore, seem advisable to propose that a study designed to enhance the validity of these measures be undertaken by the schools under study and others and that the present results based upon these questionable criteria be interpreted with caution.

EDITORIALS

The Atlanta Program

Dear Colleagues:

With this issue of the Journal, there comes to you a tentative program of our annual meeting to be held in Atlanta on August 21. In form, it represents the best endeavors of the Executive Committee to place before you the official business which is to be transacted at that time.

The formal publication of such a program is to be expected. It is a custom which has been practiced by the Convention Officers ever since the time the Convention was first established.

Through the courtesy of the Editor of the Journal, I am permitted a little space in which to convey to you a personal—yes—even selfish request. A request which has been formulated in the thoughts which have been passing through my mind during the twelve months last past.

I do not wish to be an alarmist, but I feel deeply conscious of the fact that a large number of our members are unaware of the importance of the American Association of Colleges of Pharmacy to the well being of our future as professional men and women.

Many of our old customs have become threadbare from constant usage. A replacement of these worn fibers of intellectual attainment can only be renewed by careful selection of the materials by which they are to be replaced. I trust therefore, that as you contemplate coming to the Convention, you will anticipate this need and that you will draw from your storehouse of experience, such materials as have stood the test of time or give promise of an enlarged program that will insure the solidarity of purpose for which the American Association of Colleges was created.

E. R. Serles, President American Association of Colleges of Pharmacy.

Writing In The Sand

It would be a queer world if everyone had like opinions. A difference in point of view lends spice to activities and contributes to a never-failing interest in the affairs of men. But it is true that at times the divergence of opinion is so great as to be almost bewildering. An instance of this may be found in the reaction of those who believe that the undergraduate course, leading to the degree Bachelor of Science in Pharmacy, should be ultra-flexible so that courses may be devised for each individual student to prepare him for precisely the pharmaceutical niche he plans to fill after graduation. Undoubtedly, a certain amount of flexibility is permissible and desirable. Few freshmen, however, know with any degree of certainty what pharmaceutical niche Early in their course they they may eventually prefer. may favor commercial pharmacy, but with more training they may acquire a liking and aptitude for the professional side. In the upper fraction of every class there are those who originally are interested in just pharmacy. After four years in school, they acquire a broader viewpoint. They reflect and compute their grade point averages and realize that their education is after-all quite incomplete. In each entering class, there are some without preferences, who are capable of doing only average work and who, after graduation, will gladly accept any position in the pharmaceutical realm to earn a livelihood. It is difficult, if not impossible, to surmise what a student may be thinking about four years hence.

Then there are those who feel that the salvation of pharmacy lies entirely in pharmaceutical research, which will determine the place pharmacy will ultimately occupy. Pharmaceutical research is important and necessary for pharmaceutical progress. Its foundation, however, is the undergraduate course and at this stage it is doubtful that research can be successful without a correspondingly strong undergraduate program. Unlike some other areas, the time has not yet arrived in pharmacy when the teacher may wearily mention that teaching is an undesirable interruption in connection with research.

Among the conscientious objectors, there are those who

can see little good in our present educational system, and who never lose an opportunity to find fault with it.

Doubtless there are many reforms that need to be introduced in our teaching methods, and no one realizes this more than the teachers themselves. To compare the kind of instruction given even a quarter of a century ago with that of the better schools of today is to stretch the imagination to the breaking point. This statement carries with it no reflection on the earlier schools or the group of men who served them. Many are deserving of admiration and today we bow our heads in reverence whenever their names are mentioned.

It is safe to assume that the earlier pharmaceutical educators never dreamed of the amazing development that was to take place in pharmaceutical education. Naturally not. Pharmaceutical science had not even caught the haziest vision of what was to develop in the decades to come. At best, teachers can only translate and illustrate knowledge of the times and when knowledge is meager, teaching must likewise be scanty. With the obvious expansion of pharmaceutical knowledge, who shall say that schools of pharmacy

have not kept step?

Reforms are needed today, and that they will come there is no question. One of the most insistent seems to be the necessity of standardizing the course of study. This does not mean that all courses shall be uniform, nor does it mean that colleges of pharmacy need lose their personality. On the other hand, approximately one-third of the hours of the present four-year curriculum are optional. This means that the Bachelor of Science in Pharmacy Degree stands for one type of training in one locality and for quite a different type of training in another. It may mean that the Bachelor's degree is awarded without a foreign language requirement or without bio-chemistry, physical chemistry, physics, or zoology, all obviously fundamental sciences in the pharmaceutical area.

Such flexibility is not desirable. It diminishes the opportunities and possibilities of the post-graduate program. It also influences graduate colleges in extending recognition. Many graduate colleges do not yet recognize the Bachelor of Science in Pharmacy Degree from many of the pharmaceutical schools.

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Our undergraduate course requires serious study and unprejudiced consideration that it may be sound and gain the respect and recognition so necessary in the general scheme of professional education. In developing the four-year curriculum, the status of pharmacy as a scientific health service should not be underrated, neither should professional values be magnified beyond practical needs and present-day demands.

A sound undergraduate curriculum, coupled with a good job of teaching, may not be a panacea. Too flexible a course of study leads the student to his goal through shifting sands. A sound curriculum with basic standardized requirements is a modern concrete highway on the road to professional pharmaceutical progress.

RUDOLPH A. KUEVER College of Pharmacy, State University of Iowa.

Shall We Permit Quiz Schools to Write Our Laws?

Texas answered this question with a decisive "no" at the recent legislative session, although it took considerable energy and time to do so.

A bill was presented which nullified the college prerequisite. Its origin has been carefully traced and authentic sources of information in Texas agree that the Capitol College of Pharmacy took an active interest in the bill, although the propaganda for it was sent out under the signature of individual pharmacists.

That the Capitol College was taking an active interest in these bills (there were several) is evident from a letter signed by H. P. Doyle, owner of the school, addressed to a Texas clerk and now reposing in the N.A.B.P. files. We quote:

"It has just occurred to me that you perhaps would be interested in knowing that there has been a bill introduced into the Texas legislature which is known as Senate Bill No. 166 and which would give many drug clerks in the State of Texas an opportunity to take the State Board examination and without college graduation. I would suggest that you find out who your Representative is in the State Legislature and send him a short letter telling him to vote for Senate Bill No. 166, which will come before the House of Representatives

for a vote in the near future. It would be a good idea to get as many of your friends as possible to also write letters as I feel sure it would be worth your while for in case this bill passed, it will be a mighty big advantage to unregistered drug clerks in Texas."

With the failure of the Texas campaign, it would seem that the school is now turning to legislation for the Colorado assistant as a means of swelling enrollment. Remember that Charles J. Clayton, dean of the school, is also secretary of the Colorado Pharmaceutical Association and H. P. Doyle, the owner, is Chairman of the Legislative Committee of the Colorado Pharmaceutical Association.

In the March 1938 issue of the Rocky Mountain Druggist, edited by Charles J. Clayton, is an article which reveals the plans for the future. The title is "Colorado Plans to Raise Standards by Abolishing Apprentices and Discontinuing Registration of Assistants." Will Colorado pharmacists be misled by the propaganda or will they answer "no" as the Texas pharmacists did? The decision will probably be made at the state association meeting in June.

The plan provides for discontinuation of the assistant examinations after a period of four years. The argument is presented that it will give "those who are now learning the art of pharmacy by practical experience and have been given assurance by the present law and by information received from the Board of Pharmacy that, after three years of such experience, they would be eligible for the assistant pharmacist examination, and that by reason of such assurance, there has been created a tacit contract, which would be broken by an immediate discontinuance of assistant registration."

Our own personal opinion is that it will give the quiz school a four-year period to swell the Colorado assistant roster, collecting a fee first for preparation for the assistant examination and later a second fee for preparation for the special privilege R. Ph. examination. Colorado will not only be taking care of its own assistants but the unregistered drug clerks of the whole country, if we are to judge by the intensive direct mail campaign that is going out now even in prerequisite states throughout the west and middle west.

Now read the second part of the plan carefully: "With a view to ultimately having only one class of registration

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(Registered Pharmacists) it is recommended that when, at any time, any registered practical experience as such, he or she shall be permitted to take the registered pharmacist examination at any regular meeting of the Board of Pharmacy and that, if the required grades are made, a registered pharmacist certificate shall be issued to such persons, such certificate conferring upon such person all the rights and privileges of a registered pharmacist in Colorado."

That last clause, particularly the word "all" is very important. It would be convenient for quotation in advertising campaigns and might be interpreted to include reciprocity. (See page 4, November 1938 issue, for full details).

Under existing reciprocal agreements, those who are permitted to sit in examination under special privilege acts open to assistants, etc. are NOT entitled to any reciprocal consideration. Thus those who obtain a Colorado R. Ph. license by this method, if such a law is passed, will be limited to Colorado practice only. This special privilege act, plus the advertising campaign of the quiz school, would make Colorado the dumping ground of the nation, in spite of its college prerequisite act. Is this a bill to raise standards or is it a bill to wipe out the college prerequisite?

There are some 200 or more assistants on the Colorado roster at present. The next legislative session is in 1940-41. The first four-year period for taking the assistant examination would expire in 1945, allowing time for the law to become effective, and the next five year period (to gain requisite experience for special R. Ph. examination) would begin in 1950 and possibly never end. This looks more like a bill to perpetuate the Capitol College until 1955 or 1960 than a bill to raise the standards and abolish the assistant certificate.

Note: This editorial is in no sense to be interpreted as a criticism of the Colorado Board, which is doing a good job under trying conditions. Reprinted from the Bulletin of the National Association of Boards of Pharmacy.

In the Name of Pharmacy

A recent release from the Publicity Department of the Hall of Pharmacy of the New York World's Fair reads as follows:

"At least one whiskered memory of the days gone by is assured for the World of Tomorrow through a Gilette Safety Razor Company announcement that its exhibit in the Hall of Pharmacy at the New York World's Fair will feature the mustached barber shop quartet of the Nineties.

"Yes, the selection will be 'Sweet Adeline.'

"Designed by Donald Deskey, who created the interior of Radio City Music Hall, the exhibit will feature an old-time barber shop—with moose head on the wall, copies of the *Police Gazette* on the table, and the traditional flea-bitten dog in a corner.

"Action in the exhibit will be carried on by mechanized puppies now being fashioned life size in the New York studio of Remo Bufano. The front window of the barber shop will be transformed into a motion picture screen for the filming of the company's message to World's Fair visitors.

Other releases have carried information about the modern drug store, the soda fountain, the patent medicine exhibits and—oh yes, "a Florentine pharmacy of the year 1674"

with "pharmacy jars" and bronze mortars.

Thus again "Pharmacy" has been used as the front for a commercial promotion and our national organizations and pharmacists as a class have permitted it without much protest. To top it off we are permitted to become members of the "International Drug Club" by paying \$2.00 and thus receiving the privilege of buying liquor or food and enjoying the rest room of the Hall of Pharmacy.

In contrast to this let us quote a few paragraphs from a bulletin issued to its members by the American Public Health Association (annual dues \$5.00; same as N. A. R. D. or

A. Ph. A.).

"The New York World's Fair opened on April 30, as all the world knows, and with it the Medical and Public Health Building in which the exhibit on Public Health Administration, made possible by the members of the Association, will presently appear.

"Three hundred and fifty-five individual and group contributions were made to the exhibit. It bears the title 'Your Health Department Protects Your Family' and a plaque announces the sponsorship of the American Public Health Association. The space assigned to it in the Hall of Medicine and Public Health is eminently suitable and the free

use of light and color produces an effect both interesting and attractive.

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"When members of the Association visit the Medical and Public Health Building, they should make sure that their membership cards are in their pockets. The little salmon or buff colored card attesting to their affiliation with the Association assures them of membership in the Medical and Professional Clubs as well. Here they may rest, and refresh themselves with food and drink in surroundings of comfort and beauty. The Chess Bar, the Algerian Room, the Lounge are something to see for their decorations alone. The Club is equipped with all facilities, rest-rooms, telephones, check rooms, even dictaphones. There are no dues for Association members and food and beverage prices are moderate."

No one would dare to exploit the medical, dental, or other health professions in the manner we are permitting pharmacy to be exploited.

It is a far cry from the "Institute of Pharmacy" on Constitution Ave. in Washington, D. C., to the "Hall of Pharmacy" at the World's Fair in New York, but millions will get their impression of American Pharmacy this summer and next in New York to the tune of "Sweet Adeline" sung by the barber shop quartet in the Hall of Pharmacy.—Robert P. Fischelis in New Jersey Journal of Pharmacy, May, 1939.

Educate the Pharmacist to Respect His Own Profession

The Minnesota Board of Pharmacy inspection service has carried on an aggressive, comprehensive statewide campaign to eliminate the sale of drugs in other than drug stores and the same has met with considerable success.

The Board and the inspectors are faced with criticisms from grocers, restaurant proprietors and other retail outlets to the effect that in some pharmacies preparations such as aspirin, tincture of iodine, various "seltzer" drinks are being sold by untrained clerks when the registered pharmacists are absent from the pharmacies. This, of course, defeats the fundamental purposes of the Pharmacy Law as will be noted from Section 16, which is quoted as follows:

(a) It shall be unlawful for any person to compound, dispense, vend or sell at retail, drugs, medicines, chemicals and/or poisons in any place other than a pharmacy, except as hereinafter provided.

(b) No proprietor of a pharmacy shall permit the compounding or dispensing of prescriptions or the vending or selling at retail of drugs, medicines, chemicals, or poisons in his pharmacy except under the personal supervision of a pharmacist or of an assistant pharmacist in the temporary absence of the pharmacist.

The Pharmacy Law first is a protection for the public, and a better public health service is the result when drugs are dispensed by or under the supervision of a trained registered pharmacist. This also protects the interests of the trained pharmacist employer and employee, and contributes to raising the standards of the profession of pharmacy; also our standing with the medical profession and the public at large is raised.

The Board of Pharmacy is desirous of receiving the cooperation of all pharmacists in eliminating these abuses and thereby aid in raising the standards of our profession.

Another abuse quite prevalent in some pharmacies is the absence of the licenses or certificates of registration of pharmacists and assistant pharmacists together with the annual renewal receipt, and the following regulation of the Board of Pharmacy is called to your attention:

DISPLAY OF CERTIFICATES AND CHANGE OF ADDRESS

Every holder of a certificate or license from the Board as a registered pharmacist or as an assistant registered pharmacist, shall at all times keep the same posted conspicuously in the place where he does business or is employed, and, when he changes his place of business, he shall promptly give notice of such change to the Secretary of the Board. Every proprietor, owner, or manager of a pharmacy shall at all times require registered pharmacists or assistant pharmacists in his employ to post their certificates of registration in a conspicuous place convenient for public inspection, in the place where he does business. The annual renewal receipt must also be posted on the certificate.

Edward J. Prochaska, Secretary Minnesota Board. it it it

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Objectives For A Continuous Program for the American Association of Colleges of Pharmacy

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While there are a number of objectives which might be profitably used for this purpose, there is one which stands out in my mind as most important and most vital to the future of pharmacy. It is a problem of direct concern and responsibility to the colleges, namely, the improvement in the quality of students studying pharmacy. This, of course, is not an original idea, neither is it new as this has been discussed for several years. However, it seems to me that by adopting this as a definite objective that many other projects could be built around this one and thus the main objective could be continuous for years to come. I think we could start working on this problem by assembling reading material suitable to be put in the hands of students of late high school and early college age who are interested in choosing a vocation or profession. I have given some attention to this and I find that the amount of such material available is disappointingly meager. Hence, this would lead immediately to another project, i.e. the preparation of material which presents in plain English understandable to young people of high school or early college age a true picture of the various aspects of pharmacy to serve as a basis for determining interest and for providing information upon which young people may decide whether they are interested in pharmacy. High schools are eager to get such literature and I believe that it would be of great help in arousing interest in pharmacy. As you know, young people seem to be better acquainted with the activities of the lawyer, physician, etc. than they are with the activities of the pharmacist. Also, as a result more young people seem to favor other professions and it seems to me that this is due to some extent to a lack of information and knowledge of the nature of pharmacy and the opportunities in pharmacy.

Again, around this same objective the project of developing aptitude tests could be carried out. In connection with aptitude tests and selection of students, I am sure that you realize full well that pharmacy cannot be selective until more students apply for admission than we need to meet the demands of the profession. Hence, I believe that most of us

up to the present have not been able to do anything in the way of selection of any significance. It seems to me, therefore, that the two preceding projects certainly should precede aptitude tests so that we may get material from which we may select on the basis of the aptitude tests.

Around this main objective the project of formulating objective examinations could be carried out. It seems to me that all of these logically follow one another and are coordinated and interrelated. Frankly, I do not know of anything which is of greater importance to the future of pharmacy and, hence, I believe that here is an opportunity for the colleges to do an outstanding piece of work and make an outstanding contribution to the profession.

As I said before, there has been considerable discussion of this topic but it seems to me that we must do two things: first, we must make a beginning by doing something constructive; second, we must start at the bottom and work up. By this I mean that we must first increase the number of applicants up to the point where we can afford to be and it would be abvisable to be selective. The first thing to do is to increase in some way the interest in pharmacy and stimulate a desire on the part of our best young people to go into pharmacy. There are a number of other projects which could and should be built around the main objective as stated but I believe the illustrations given are sufficient to indicate the possibilities.

B. V. Christensen, University of Florida.

That Pharmaceutical Legacy Again

The following statement is culled from a recent letter by Dr. Frank B. Kirby, Director of Education, Abbott Laboratories:

"No doubt you saw what a great many other pharmaceutical people caught, namely, that generous donation to a college (not pharmaceutical) by a well known pharmaceutical manufacturer. There seems to be no one or no committee putting on an effective plea for pharmaceutical college recognition. May I ask you whether there is an association of pharmaceutical editors, by which in some way they might be induced to put on a complete and concentrated effort in the shape of some promotion for two objectives. First the matter of the necessity for a pharmaceutical man on our State Health Boards, second, the matter of

financial support by legacy covering the needs of our pharmaceutical colleges. Have you anything to suggest?" Frank B. Kirby.

Unfortunately there is no such association of pharmaceutical editors as Dr. Kirby suggests, but there is no reason why we should not proceed at once as individuals to gain the objectives he mentions by keeping them before the body pharmaceutic by the editorial page route in every issue of our national, state, trade and college journals. Especially should this matter be stressed in our trade journals which have frequently raised the question with pharmaceutical educators as to how their journals can help progress in pharmaceutical education. There is a large per cent of pharmacists who read only trade journals and the trade journal has not only a great opportunity but a great responsibility to present the needs of pharmaceutical education to those who practice and make money in and out of pharmacy.

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Here, Mr. Editorial Writer, (see Editorial Page) who complains that "cooperation is unheard of "among Pharmacy's leaders" of today, here is an apportunity to do a little cooperating yourself. To have something concrete to begin with, every journal might stress the appeal made by Mrs. Robert P. Fischelis in a letter printed under Miscellaneous Items of Interest in this issue of this Journal in behalf of a loan fund for student which has been established by the Women's Auxiliary of the American Pharmaceutical Association. There are some who do not believe in loan funds for students but it should be borne in mind that loan funds constitute a step toward the promotion of the education of the individual and it is only one step farther to the promotion of education and research by the esetablishment of graduate scholarships and from there it is only one more step to the support by legacy of our teaching and research institutions. From time to time the writer has called attention to the hopeful signs in pharmacy. He has seen no more hopeful sign than the turning of our women to the support of pharmaceutical education. He knows what the support of women has meant to the Presbyterian Church and to a lot of other institutions he has contacted. He suggests that you not only mention this effort of the Women's Auxiliary in the editorial pages of your next issue, but he also suggests that you send a dollar to Mrs. Fischelis at 640 West State Street, Trenton, New Jersey. If you want to cooperate with the writer, and on the same level, you will have to send two dollars. One dollar he sends out of his desire to be helpful to the cause; the other he sends out of gratitude for having discovered that neither statement in the slogan, "The menace of Pharmacy to Women or the Menace of Women to Pharmacy", is true.

Rufus A. Lyman.

Improvement Needed in Teaching Applied Pharmacology

There comes over our desks each year the annual report of Dr. Raymond B. Fosdick, president of the Rockefeller Foundation. Little does the public realize the far-flung activities of this organization, or the vast resources at its command. During 1938, for example, appropriations covering work in public health, medical sciences, natural sciences, social sciences, humanities, program in China, miscellaneous and general, totaled \$16,867,087. The principal fund as of December 31, 1938, was \$148,004,942.

In a chapter entitled "Tasks Ahead for Medicine," Dr. Fosdick discusses ruthlessly some of the weaknesses in medical teaching. One of these is so close to the work of druggists as they see the modern young physician in desperate straits as he attempts to write prescriptions when he first goes into practice, that we are constrained to quote the paragraph in full:

"In twenty-five recognized American medical schools there are no separate departments of pharmacology, the subject being combined for economic reasons with physiology or biochemistry. In many other schools where there is a division, the subject receives but meager support. This situation is doubtless responsible for the failure of pharmacology to attract recruits and for the shortage of outstanding younger men to fill professional chairs which are becoming vacant. Larger support is needed not only to promote fruitful research in this important field but also to improve the teaching on the applied side—the administration of drugs—which is notably weak in most American medical schools."

Sometime ago we heard a member of the State Board of Medical Examiners in Virginia say that his experience with the men as they came before the Virginia Board was, that while in many subjects they were showing improvement from year to year, in materia medica and prescription writing they were definitely more poorly prepared than were the men of former years.

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With so influential a body as the Rockefeller Foundation now attacking the problem, it is highly probable that the therapeutic nihilists among the curriculum makers in our American medical schools will soon begin to see the light and plan for thorough and well grounded courses in the administration of drugs—a desideratum of primary significance in the proper training for the practice of medicine.—Wortley F. Rudd in the Virginia Pharmacist, May, 1939.

Food, Drug and Cosmetic Legislation

A classic example of what the friends of the new Federal Food, Drug and Cosmetic Law may expect at the hands of those individuals and groups that will never lose an opportunity to weaken it, may be found in HR-5379. Our readers who wish to follow these attempts to break down the new law will find interesting reading if they will have their congressmen send them a copy of this bill, the committee report on same, and also the Congressional Record for April 19, This contains a full report of the discussion of the above mentioned bill, and indicates clearly how nearly its proponents came to driving an entering wedge into the ranks of even those who are honestly favorable to strong food, drug and cosmetic laws but who apparently became bewildered by the provisions of this special measure. Further, the apparent disposition on the part of Congress to delay the effective date of enforcement of the new laws shows the power that the old guard still holds.

After having observed rather closely for some years the tactics employed by those who were desperately opposed to the passage of any food and drug law at all that would curtail their opportunities for distribution of their products, partly at least, by exaggerated and often false and misleading advertising of their goods, it is our considered judgment that

at no time will the new measure be safe from attacks by its enemies.

The American Association of Colleges of Pharmacy, the first among the national drug organizations of the country to take an aggressive stand for passage of such legislation, must, we believe, continue to be alert to the guerilla warfare

that we may expect to be waged against it.

Ask your congressmen to send you copies of every bill that comes up that seems in any way directed against what we believe to be one of the most constructive measures passed during the present administration. Once our representatives know that we are sincerely and aggressively persistent in our efforts to see that the public is protected against frauds as the new law is designed to do, their hands will be greatly strengthened in opposing efforts to break down the present protection that the public has through the new measure.

Wortley F. Rudd, Medical College of Virginia.

A Request

All papers presented before the American Association of Colleges of Pharmacy, either in the General Sessions or the Teachers Conferences become the property of the Association and are entitled if worthy to be printed in the American Journal of Pharmaceutical Education. In preparing papers or reports for delivery in person it is often desirable to include material which is not suitable for printing. All authors are urged to bear this in mind and so arrange the material that any material not intended for printing may be deleted without destroying the continuity of the paper or the report. Such thoughtfulness will be appreciated by the editor.

Rufus A. Lyman.

THE EDITOR'S PAGE

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Much is being said, not only in this journal but in other journals, concerning the need of funds for pharmaceutical education and research in our colleges of pharmacy. Not only that, the problem is being discussed by pharmaceutical manufacturers themselves and by others interested in various phases of the pharmaceutical industry. This is a wholesome indication of the justice of such claims. It is also an indication that if such support was provided, it would work to the financial advantage of those engaged in the industry and would bring a greater dignity to pharmaceutical education and practice. The attitude of this journal has been that before pharmaceutical education can expect financial support from the pharmaceutical industries, the colleges of pharmacy must show that they have the proper equipment, teaching and research staffs to carry on research problems of a pharmaceutical nature. There are many institutions which have demonstrated by the actual production of research that they are in a position to do this. The Editor has also felt that before we could ask the larger and wealthier manufacturers, wholesalers and jobbers to contribute funds for the support of education and research that it was quite necessary that students and alumni of our colleges and retail druggists of the common garden variety should contribute funds for the support of these causes even if in a small way. Such contributions would show our sincerity of purpose in asking larger contributions for those who are able to give. Recently a research project has been sponsored by the American Medical Association, dealing with the effect of "Age on the Efficiency of Digitalis." The research is to cover a period of three years and the College of Pharmacy of the University of Nebraska has been selected as one of twenty-one laboratories to make the study. No funds were available for the study so the College of Pharmacy asked the University of Nebraska Foundation Association for funds to carry out the research. This Foundation has been established for the purpose of receiving gifts for the University to carry out work for which taxpayers' money could not be used, or because there was not a sufficient amount of it to make the studies possible. Chancellor Emeritus Burnett is the head

of the Foundation. He undertook to raise a sum which would be adequate for the purpose. It was estimated that a thousand dollars would be sufficient and the plan was to obtain a graduate student trained in pharmacology to collaborate with Dr. H. G. O. Holck in carrying out the study. In a few weeks Chancellor Burnett had obtained the entire sum from a group of local citizens, the contributors are named below:

Mr. Howard S. Wilson, Bankers Life Insurance Company \$250.

Mr. R. E. Campbell, Miller and Paine (dry goods merchants) \$250.

Mr. George Holmes, (banker) First National Bank, \$100. Gold and Company (dry goods merchants) \$100.

Mr. Arthur Raymond, wholesale druggists (Lincoln Drug Company) \$100.

Mr. W. W. Putney, Midwest Life Insurance Company, \$100. Messrs. Joe and Fred Seacrest, (publishers) Nebraska State Journal \$100.

It will be noted by a study of the donors that with only one exception, namely, Mr. Arthur Raymond of the Lincoln Drug Company, none of them could have any possible interest in this particular study other than the desire to contribute to a work that would bring credit to the College of Pharmacy in particular and to the University as a whole. Of course there is this other fact, they were shown that it was a worth while project, but there are plenty of other projects along lines of merchandising, or life insurance studies, or banking, or journalism that would appeal to a greater degree to this particular group. This list of contributors is given in detail in order to show what may be done where there is no particular incentive except the loyalty of the givers to the institution. This is a magnificent illustration of what Doctor Frank Kirby stressed in his editorial "College Loyalties" in the April number of this Journal. It should be noted that this loyalty was manifested not by students or alumni of the College of Pharmacy but by life insurance men, business men, bankers and newspaper men who were in no way or at any time connected with the College of Pharmacy.

In this number of the Journal appears the first of a series of articles by Dean W. F. Rudd, covering the conduct of the business affairs of the United States Pharmacopæia and

its revision. To those of us who have been puzzled through a period of twenty or thirty years as to how the Pharmacopæial machinery works, these articles will be most interesting. This series of articles is an attack upon no individual or group of individuals. It is not a case of muckraking. It will consist of a plain statement of facts obtained by Dean Rudd from men who have had some intimate relationship or official connection with Pharmacopæial building and revision. Through a period of eight or nine decades the publication of the United States Pharmacopæia was a private enterprise. Its use became a tradition. But when in 1906, Congress by the passage of the Food and Drugs Act gave the Pharmacopœia legal status, it could no longer be considered a private enterprise. It became public property and the public has a right to know how the business connected with the production of its own legal code of drugs and drug preparations is conducted. The thing that drives men to action is the yearning of the human soul for knowledge. Ever since the Editor sat in the Pharmacopæial Convention of 1910 he has wondered why men fought so hard and often so bitterly for a place on the Revision Committee, or on the Board of Trustees of the United States Pharmacopæia. In 1920 and still in 1930 the wonder grew and not until the evening before the dawn of the 1940 Convention did he realize why men should struggle for Pharmacopæial preferment. The Editor was just a little surprised to learn that each article in the series "The Pharmacopæia and the Physician" was paid for. He had the idea (perhaps erroneously) that the series was another case of labor of love or love of labor. Thank you, Dean Rudd, for the understanding. From time to time the Editor has reminded the readers of this journal that he is not next to things pharmaceutical. What little he has found out has come to him as he sat at the ringside. He has not been in the center of the game where things are done. His ignorance of Pharmacopæial finances as revealed by Dean Rudd is another proof of the sincerity of his claim that in pharmaceutical matters he is ignorant. He does not know why he was not allowed to share in Pharmacopæial finances. His first thought was that it is because he is so far away from Pharmacopæial headquarters. And yet some of his friends in states not far distant from Nebraska have been treated handsomely. One of these friends has suggested

that the Editor was probably left out of the game because of the fact that he is universally known to be the best dressed man in American pharmacy and some of his close rivals for this honor are afraid that if he were allowed to share in Pharmacopæial division he would have the means to further fortify himself in his delectable and enviable position.

The Editor does read the papers, and he does read the magazines and he does read Drug Topics, and the Virginia Pharmacist and the New Jersey Journal of Pharmacy and sundry other things that Dr. Edward Kremers calls "just second class matter". In the New Jersey Journal for May appears an editorial, "In the Name of Pharmacy", (reprinted in this Journal) from the pen of Dr. Robert P. Fischelis, which compares the New York Fair's Hall of Pharmacy with the dignified educational and scientific exhibit in the Medical and Public Health Building where pharmacy naturally belongs. For reasons unknown to the writer, it seems that the Fair did not take cognizance of the Editor of this journal and it was not until a few days after reading this editorial that some releases from the Publicity Department, Hall of Pharmacy, New York's World Fair fell into his hands. The Fair's own advertising of the much extolled Hall of Pharmacy declares it a mixture of a harem, a series of fast moving polo games, a Sultan Inbad the Ailer, a showing of sporting events, a series of distorting mirrors, a maze of patent medicines, a new baby straddling and riding into town on a radiobeam, a boy getting his education by the hypodermic method, all to the strains of "Sweet Adeline" by a barber shop quartette as a flea-bitten dog keeps time scratching his papier maché ribs in a corner. A magnificent conception of pharmacy which will take something more than the names of the decent manufacturers among the exhibitors, or noted artists, or radio entertainers to rectify the insult to those who recognize in pharmacy a public health profession. When the Editor read this propaganda he went through the copy for this issue of the Journal and deleted every reference that authors and collaborators had made extolling the Hall of Pharmacy at the New York Fair. He does not propose to permit this Journal to be a party to the fostering of any

money making scheme which represents pharmacy to be everything that it is not.

Headache Number I, (Hall of Pharmacy) subsided only to be followed by headache Number 2. It came in the form of a letter. Here it is:

University of Wisconsin May 31, 1939.

My dear Lyman:

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Herewith, I quote two paragraphs of a recent editorial concerning pharmaceutical leadership in the "Professional Pharmacist."

"Now, a vital need has arisen for leadership. Decisive, unbiased, ethical leadership. But, a critical survey reveals that it is hard to find. Pharmacy's "leaders" today seem a sorry lot. Like a reed swaying to and fro at the slightest puff, breaking under the slighest pressure, and with roots whose tenacity is but a phantasy.

None but will 'sell out' for paltry pieces of silver. Each has 'his price' and for most the purchase is shamefully low. Most of the breast-beating thunderers devote their efforts to cavil and to criticism, not constructive but hypercritical. Others spend their every effort attacking their professional colleagues, and cooperation is unheard of. Most strive but for personal advancement. Few are interested in Pharmacy."

This ought to prove a good text for our preacher!

Sincerely yours,
Edward Kremers.

Oh! what a text! I do not know who wrote this editorial. I only know that it was written just after the author had made his first visit to the Hall of Pharmacy at the New York World's Fair. He has a fracture at the base of the skull. That is one thing the Hall of Pharmacy does. It distorts things. He is mixed up. Give him a little time, he will recover, then he will see things differently. Then he will see that not a single thing in his editorial is true, (like things in the Hall of Pharmacy.) If he will make himself known to me I will furnish him a pharmaceutical Baedeker that will lead him from Maine down the Atlantic seaboard and then on through the old South across the plains of Texas, New

Mexico, Arizona and the Mohave Desert. Then up through vine clad valleys and redwood forests over mountain and plain and roaring rivers to the Canadian border and then eastward across the plains of Montana, North Dakota, the lakes and forests of Minnesota, Wisconsin, Michigan, the Great Lake Region to Vermont and New Hampshire, and then double back and crisscross north and south until the lines cross every state in the Union and he will find in great cities and in roadside hamlets men engaged in every form of pharmaceutical activity, men who are honest, sincere, who cannot be bought at any price, men who are leaders in their communities and in the nation and men who work together for a common cause, namely, to make pharmacy a profession of service in maintaining the health and the morals of a people. If that is not cooperation, and if that is not leadership, then I do not know what cooperation and leadership is. Think it over Mr. Editorial Writer, would not you rather have that kind of cooperation and that kind of leadership in pharmacy in this country than to have one man to whom we could lift our hands in fear and trembling and shout, "Heil Hitler"? If what is happening in our country in pharmaceutical advancement is not sufficient to be inspiring then read the American Journal of Pharmaceutical Education and find out what progress is being made in pharmacy beyond our borders, in Canada, in England, in Europe, in Russia, in India, and in war torn China. If one will but look at what is being done and not at what is not being done, he will see the pharmaceutical trend is forward and upward.

There are many important problems the Editor would like to mention but his space is more than used up. As he ends the labor and the joy of bringing another copy of the Journal to fruition he finds himself in a reverential mood. In keeping with the spirit and the events of the day he feels like praying, God save the King, or God save the Queen, or even God save the President. But perhaps it would be more appropriate and more to the point for him to say—God have mercy on those who conceived the Hall of Pharmacy at the New York Fair, or God save the Pharmacopæia! It is with high hopes that special emphasis be placed upon the latter. Rufus A. Lyman.

GLEANINGS FROM THE EDITOR'S MAIL

MINISTRY OF EDUCATION Republic of China

Chungking, March 24, 1939

Professor Rufus A. Lyman, Chairman and Editor, American Association of Colleges of Pharmacy, College of Pharmacy, University of Nebraska, Lincoln, Nebraska, U. S. A.

Dear Professor Lyman:

The war has driven me from Nanking to Hankow and then to Chungking, here. We suffered a great material loss and met numerous difficulties yet we take new students, offer new courses, add new equipments and this National School of Pharmacy of which I am the dean, goes on as usual. Japanese can burn our buildings, bomb our busy streets or kill our non-combatant men, women and children, but they can not stop us from doing what we want and decide to do.

This school is in its third year, has three classes, 98 students of which 39 are girls. The girls are very active in all activities and lead the classes even in scholastic standing. You may be surprised to learn that young women in China are different from those ten or fifteen years ago. They compete with their brothers in every line and are invading man's field everywhere. Even in the army you will find many of them. To secure a position it is rather difficult for the women. But this is true only in the factory and so far I have had no difficulty getting jobs for my former girl students. It is my opinion that there will be more opportunities than girls need in the many years to come. There is no reason why we should discourage the Chinese girls in studying pharmacy. As a matter of fact I have met many friends who think that pharmacy is the most suitable profession for their daughters.

In the country at large there are at present six schools of pharmacy. Only two schools in the lost territory were forced to be temporarily suspended. One or two new schools are expected to come into existence the coming fall. Two pharmaceutical factories are newly established and putting up basic chemicals. Although our brothers in the front are struggling with our enemy we are working with doubled effort to keep everything going on as usual, and so is

the pharmaceutical education.

But due to our national policy on the limitation of foreign exchange we are practically unable to send any amount of money abroad for books, journals, etc. Our subscriptions to them are discontinued and our contacts with the recent advances in pharmacy lost. Would you be kind enough to send us free, for the time being, a copy each of your recent publications, the Journal of the American Association of Colleges of Pharmacy to the Technical Committee on Pharmaceutical Education, Ministry of Education, Chungking, Szechuan, China. We shall abstract the articles, translate into Chinese and dis-

tribute among those who are interested in pharmacy. We shall consider it as a great favor of yours and much obliged. We shall subscribe to it as soon as the war is over.

So far as the war is concerned, we have lost only the cities, rail-roads and home highways, but not the inlands and farmers beyond. The unimaginable brutalities of the Japanese, especially toward our women and children, will never be forgotten and only tend to strengthen our effort to fight to the bitter end. We have a leader, we have millions of warriors, and we have friends of the world so we are sure that we will drive our enemy away at last and teach the aggressor a good lesson.

Anticipating help from you, the Journal, we are

Very truly yours,

The Technical Committee on Pharmaceutical Education,
Ministry of Education,
Republic of China,
S. Y. CHEN, Secretary.

I have read your last issue of the Journal of Pharmaceutical Education with a great deal of interest. I was especially interested in the article by B. V. Christensen. We have so many pharmaceutical organizations and how much benefit they could be, both for public welfare and for the welfare of the profession of pharmacy, if the objectives were impressed on the members of the profession to a

greater degree.

We should have more of a planned program. The different organizations may have various individual group objectives, but there are many of these we have in common. It is my opinion that one of your issues, with articles from outstanding leaders in the pharmaceutical field, would produce excellent results. Statements, for instance, of the objectives of the pharmacy colleges, the state boards of pharmacy, the American Pharmaceutical Association, the National Association of Retail Druggists, the state associations, the United States Pharmacopæial Convention, the National Formulary Committee, and the Inter-professional Relationship Committee. Then have a comprehensive article correlating the various objectives of the different groups; the objectives we have in common.

I am sure the Editor could do a good job of this himself in dramatizing and publicizing the same; and if the instructors in the various colleges of pharmacy would give expression to the idealism as is brought out by Professor Rising of the University of Washington in his article in the last issue of the Journal, pharmacy will

make more constructive progress.

There is certainly a need for a journal of the type you are publishing, only it should have a larger circulation. It serves as an

ideal inspiration.

I was discussing your Journal with Dean Rogers the other day and I made a few of these suggestions and he recommended to me that I write to you.

EDWARD J. PROCHASKA, Secretary Minnesota Board of Pharmacy.

Apropos of your "Slough of Despond" brought about by "too much uniformity and regimentation in curriculum building", I cannot profess over much sympathy. For a long life time, I have fought both, yet in spite of my failure, I have never become despondent, but am fighting them in my old age.

You have your fling at "so-called pharmaceutical arithmetic and socalled pharmaceutical Latin". At the 1930 Washington meeting of the American Association of Colleges of Pharmacy, the Curriculum Committee laid down the rule that all studies should be of collegiate grade. Having laid down this rule they proceeded to stress pharmaceutical arithmetic and pharmaceutical Latin. I had the impudence to rise and ask the question, "since when were these studies of collegiate grade. No officer of the Association, no member of the Committee answered the question. Not even you seconded my request for information.

Yet I was not despondent then, nor am I now. I could not, however, resist having this little fling at you. Go ahead, and as our new Governor says "God bless you!" EDWARD KREMERS,

University of Wisconsin.

I have thought some of writing an editorial in answer to some of those appearing in the last number of the Journal concerning courses and methods, particularly in pharmacognosy. I am becoming more and more impressed by the fact that the general run of pharmacy courses requires so much "learning by heart" that the average student, and in many cases, the instructor also, has completely lost any semblance of ability to think or reason. The pitiful thing is that a very high percent of the material learned by the student is unadulterated junk that merely clutters up his thinking processes. About a year ago you included an article in the Journal which outlines the material covered in one course in pharmacognosy in one of the member schools. last statement in the outline stated that the course covered 217 drugs. To me this sort of teaching is not only utterly ridiculous but injurious to the mind of any student required to take such a course. I am positive in my own mind that the student would be much better equipped to meet the problems of life if this number were reduced to not over 100, and possibly less than that. The information gained in a study of fewer important drugs could be made sufficiently conclusive to be of some actual value for the purposes for which such information is to be applied, i.e., in prescription compounding, discussions with physicians, etc., and might stimulate the student to a further study of less important drugs should he care to do so. I think that I have had considerably more prescription experience and more contact with physicians than has the average pharmacognosy instructor and I feel that I can speak with some authority when I say that the average course in pharmacognosy prepares the student for little more than the state board examinations. LLOYD L. BOUGHTON, University of Kansas.

I found Dean Roger's article "Flexible Curricula in Colleges of Pharmacy" (A. J. P. E. Vol. III, No. 1) very interesting and fairly well in accord with my own conclusions, concerning this matter. is necessary that we allow for flexibility in our curricula if we are to serve all of our students to the best of our ability.

I feel this article was very timely, as the present trend of pharmaceutical education appears to be the expansion of all phases of our ever broadening profession. Each group or division, such as pharmacology, insists that their enlarged courses be a required part of the pharmacy curriculum. If this inflation continues unabated the four year course will not be able to contain all the required courses, not to mention the optional ones or desirable related subjects.

I am of the opinion that it would be an error to fill the Syllabus with required courses at this time. Should the American Council on Pharmaceutical Education make the new edition an obligatory part of its standards for accreditment, many schools would find their individual university requirements in serious conflict. Local conditions, both university and business, demand a certain amount of flexibility in our curricula.

Leon W. RICHARDS,

University of Montana.

If you could arrange to leave the sizzling prairie soon enough to attend the Plant Science Seminar at Blue Ridge, N. C. the week preceding the A. A. C. P. convention, I am sure you would enjoy a pleasant time with a congenial group. Republicans forget their troubles and Presbyterians feel that they were happily predestined in the cool, exhilarating air of the mountains.

J. HAMPTON HOCH

Medical College of the State of South Carolina.

I had noticed with considerable interest the report to the effect that the American Association of State Universities and Land Grant Colleges were being fed up on inspection and accrediting organizations. It is interesting to note that they have appointed a committee to study this whole problem. With a single accrediting group in American pharmacy we shall be on sound ground. WORTLEY F. RUDD,

Medical College of Virginia.

Announcement has been made that Dr. George Urdang, distinguished scientist, author, editor, and historian is in residence at the University of Wisconsin to collaborate with Dr. Edward Kremers in the preparation of a text book on the history of pharmacy for American students. In a recent letter to the Editor, Doctor Urdang expresses his viewpoint as follows:

"According to my European experience, the historian of pharmacy has three essential tasks. First of all he has to enable the pharmacist to appreciate the contributions of the apothecary to the development of science and to make him proud of the fact that he is entering upon the work of a great profession. Second, he has in the contents as well as in the presentation of his work to combat and defeat the prejudice so widely existent in the scientific world that pharmacy is a playground for dilettantism. Third, he has to convey to the general public a better knowledge and esteem of the real

tasks and importance of pharmacy, and to influence the public opinion

to the benefit of pharmacy.

The pharmacist not being informed of the part played by his profession in the development of civilization lacks the most important fundamentals of professional ethics and efficiency; the pride of the tradition of his profession and the ability to defend the legitimate professional claims on the basis of the traditional tasks of pharmacy and their importance for cultural life and public welfare.

Thus it may be possible to avoid old mistakes and to find new and better ways to the invariable aim which has to keep the pharmacists aware of the responsibility toward their predecessors and successors, in order that pharmacy may maintain the high rank which it deserves.

To find here the right way is in my opinion only a question of arranging the material, of personal tact and of literary skill."

No finer service than the completion of such a text along these lines could be rendered to American pharmacy. It means the development of a high morale in the body pharmaceutic. We welcome with appreciation Dr. Kremer and Dr. Urdang to the task.

Rufus A. Lyman.

I was greatly interested in the two letters that were published on page 263 of the April issue of the American Journal of Pharmaceutical Education, as they dealt with the subject which I discussed with you for a short while at the Minneapolis meeting. Quite recently I have received the enclosed communication fom the Association of Harvard Chemists, of which I am a member, and I would like to refer you to the last paragraph of this article, (reprinted below) which indicates some of the steps the chemical departments, and others of the greater universities of our country, are taking in order to develop work in the field of medicinals.

It would be interesting to know how many such departments are actively engaged in this type of work and now many are really trying also to receive help along this line. I personally feel that the time has come for the allied organizations of pharmacy to make a concerted effort to receive this type of aid from the manufacturers who are deriving their chief income from pharmacy and medicine. Since our discussion last summer, I have given the matter considerable thought and it would seem to me that the American Association of Colleges of Pharmacy, since it has lost one of its important functions-that is, examination of the member colleges-might well appropriate a set sum of money to be made available to the committee to be composed of about six members of recognized standing and intelligence, formed of two each of the following organizations: the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy and the American Pharmaceutical Association, to request appointments with the proper officials of our large manufacturing houses with a request that at least certain of our pharmacy schools are now in position to receive greater help along these lines than they have in the past for the development of professional pharmacists in general. It is also interesting to know that the American Chemical Society is taking steps to accredit departments of chemistry. When I say accredit I mean accredit as they generally do things in the right way.

HENRY M. BURLAGE,
University of North Carolina.

President Conant took over the responsibility of carrying to a conclusion the investigations of Professor Kohler on large-ring cyclo-paraffins, and directed the researches of Drs. H. A. Potter, H. T. Thompson, and R. B. Thompson. Prominent among other research activities was the work on precision thermochemisty of Professor Kistiakowsky, who was honored this spring by election to the National Academy of Sciences. Work has been continued also on infra-red and Raman spectra (Wilson), the kinetics of replacement reactions (Bartlett), and carcinogenic hydrocarbons (Fieser). The U.S. Public Health Service group, which heretofore has taken care of the biological experimentation required in connection with the synthetic work on the cancer problem conducted in Converse, will shortly vacate the temporary quarters in the Gibbs Laboratory and move to Washington. Thanks to a substantial grant from the Childs Fund at Yale, made jointly to the research group in Converse and to the Huntington Memorial Hospital, the biological studies in the future will be conducted at Harvard and on a somewhat expanded scale. Another interesting development is the establishment of a University Committee on Pharmacotherapy, which includes representatives of the Medical School and of the Departments of Chemistry and Biology. This is expected to effect the coordination of various interests and efforts directed to the advancement of medicine, and a considerable expansion of organic chemical research in this important field is envisioned.—Abstract from an Announcement by the Association of Harvard Chemists.

NOTES AND NEWS

Dean Emeritus W. J. Teeters of the State University of Iowa spoke before the State Senate at Des Moines on March 8 on pending pharmaceutical legislation. Professor Louis C. Zopf spoke on the subject, Pharmaceutical Service in the Hospital, at a meeting of the Iowa Hospital Association at Cedar Rapids in April.

Recent additions to the faculty of the College of Pharmacy of the University of Illinois are Earl Richard Finger in pharmacy, Robert

Besancon in physics, and Dr. Robert Spense in chemistry.

The tenth annual pharmacy night exhibition of Duquesne University School of Pharmacy was made on April 21. Three thousand visitors saw the exhibits which featured student demonstrations of the techniques, both professional and commercial, of the modern pharmacist.

Dr. James M. Dille of the College of Pharmacy of the University of Washington was elected to membership in the American Society for Pharmacology and Experimental Therapeutics at the recent meeting of that society at Toronto, Canada. At the June commencement of the University of Washington the following graduate degrees were granted to those who had majored in the pharmaceutical sciences. In each

case the thesis title is given. Master of Science in Pharmacy—Dorotha M. Duff, "Distribution of Toxic Doses of Picrotoxin in the Blood and Tissue". Doctor of Philosophy—Lloyd W. Hazelton, "The Depressent Action of Picrotoxin and Metrazol." Bernardo Acena, "Toxicology and Pharmaceutical Investigation of Certain Alkaloids." Clifton E. Miller, "A Pharmaceutical Study of Tannis Acid U.S.P."

Governor Roy E. Ayers has signed House Bill 383 which provides pensions for all members of the teaching staff of the Greater University of Montana. The retirement bill provides that faculty members pay five percent of their salaries into a pension fund. They may retire at 65 and it is obligatory at 70, after 35 years of service. The pensions will amount to about \$1,000 yearly. Benefits will not begin until 1941.

The fourth annual One-Day Drug Conference sponsored by Howard College, Department of Pharmacy and the Birmingham Retail Druggists Association was held at Birmingham on May 12. Among the speakers were Dr. Searle Harris, past President of the Alabama State Medical Association whose subject was Drugs, Doctors, Dentists; Dr. Leo B. Dillon of the Birmingham District Dental Society whose subject was Opportunities in Dental Pharmacy, and Elbert W. Gibbs, President of the Alabama Pharmaceutical Association who discussed Fair Trade.

The fourth annual Bronx Better Health Week sponsored by the dental, medical and pharmaceutical societies and the Tuberculosis and Health Committee of the Bronx and the Board of Education and the Department of Health of New York City was held on May 3 and 4 at Fordham University, College of Pharmacy. The program was devoted exclusively to the control of diabetes and its complications. The list of speakers included Mr. Robert R. Gerstner, whose subject was, The Pharmacist and the Diabetic Patient.

Professor George W. Hargreaves of the Department of Pharmacy of the Alabama Polytechnic Institute was recently elected president of the Auburn Lions Club.

Mr. O. U. Sisson, Chicago, Chairman of the Inter-Professional Relations Committee of the National Association of Retail Druggists, was the guest speaker at the May meeting in New York City of the Association for the Advancement of Professional Pharmacy. His subject was Pharmacy Organizations and the Need of More Organization in the Field of Professional Pharmacy.

Edwin Rathbun and Byron E. Emery, graduates of the University of California received the masters degree (Hospital Pharmacy) from Western Reserve University at the June Commencement. Western Reserve opened all departments to the public at its open house program on April 28. The School of Pharmacy featured exhibits of prescription compounding, hospital pharmacy, pharmaceutical manufacturing, and demonstrations on the action of common soaps on earthworm segments and human skin.

Dr. Einer Lundsgaard, Professor in Physiology and Dr. Knud O. Moeller, Professor in Pharmacology of the University of Copenhagen, Denmark, have been appointed lecturers in their respective fields at the Pharmaceutical Institute of Denmark.

Dr. Harald G. O. Holck and Lewis D. Fink of the College of

Pharmacy, University of Nebraska, presented the results of their studies upon the Effect of Sex Life Upon Resistance to Nostrol and Pentobarbital at the meetings of the Federation of American Societies for Experimental Biology at Toronto, Canada, April 29. Dean R. A. Lyman was elected to honorary membership in the United Provinces Pharmaceutical Association of India, by the Council at its meeting on April 17. The eighteenth annual open house at the College of Pharmacy of the University of Nebraska was held on May 4. exhibits were developed with the idea of presenting the educational requirements of the pharmaceutical curriculum. In April Mr. Robert A. Hardt, a graduate of the College of Pharmacy of the University of Nebraska, now Products Development Manager for E. R. Squibb and Sons, spoke before the Nebraska students on How to Get a Job and Hold It. Rufus A. Lyman Jr., son of Dean and Mrs. R. A. Lyman was given the master of arts degree by the University of Nebraska at the June commencement. He has been granted a teaching assistantship at Johns Hopkins University where he will go for graduate work. Lewis D. Fink, a 1937 graduate of the University of Nebraska College of Pharmacy, was given the master of science degree, having majored in pharmacology, and has been granted a teaching scholarship in the Department of Pharmacology of the University of Minnesota, where he will do graduate work the coming year.

The seventh annual Science Day exhibits sponsored by the Philadelphia College of Pharmacy and Science was held on April 21 and 22. The purpose of the exhibits is to foster interest in the methods and equipment used in scientific education and research. Dr. E. Fullerton Cook and Mrs. Cook sailed for Europe late in April. In May, Dr. Cook attended the Technical Commission of Pharmacopæial Experts of the League of Nations Health Organization, which met at Geneva, Switzerland.

At Wayne University, an award consisting of a beautifully engraved silver cup is made each year to the fraternity that has the highest general scholastic average. This year the trophy went to the Alpha Eta Chapter of the Phi Delta Chi Fraternity. Peter Kondrasky a pharmacy senior at Wayne University helped the tennis team establish a new intercollegiate tennis record by winning 60 out of 64 games in the last three years. His personal record of winning was 46 out of 48 games. Philip Weltman and Edward Schuler of the College of Pharmacy ranked in the upper two per cent of the University graduating class of 1300 students and their degrees were conferred with high distinction. Both men will enter the Graduate School for graduate work in pharmacy.

The Division of Pharmacy of the North Dakota Agricultural College will hereafter be known as the School of Pharmacy. The School of Pharmacy held its annual open house on May 5. Displays were made of crude drugs, first aid materials, cosmetics, narcotics, vitamins, biologicals, pharmaceutical chemicals and official preparations, drug assaying and prescription compounding. Professor Kenneth Redman will be on leave the coming year doing graduate work at the University of Wisconsin. During his absence his work will be carried by Mr. Carl Miller now of the University of Washington.

Mr. John F. Allen of Corvallis, Oregon, a member of the Oregon

Board of Pharmacy, was recently appointed a member of the State Board of Health by Governor Charles F. Sprague.

Under the terms of the will of the late Lynn B. Ferguson, who for many years was a retail druggist at Newberg, Oregon, the sum of \$1000 was left to the educational fund of the Oregon State Pharmaceutical Association. This fund is the student loan fund of the School of Pharmacy of the Oregon State College.

Dr. Charles H. Rogers, Dean of the College of Pharmacy of the University of Minnesota is chairman of the section of Scientific and Practical Pharmacy of the Minnesota State Pharmaceutical Association. At the June meeting of the Association he was assisted by Professor Earl B. Fischer who is chairman of the Northwestern Branch of the American Pharmaceutical Association.

Mr. Frank M. McCabe of the Bruce Publishing Company of St. Paul and Editor of the Northwestern Druggist passed away on May 19. Mr. McCabe has been a vigorous exponent of professional pharmacy in the northwest.

Dean W. F. Rudd of the School of Pharmacy of the Medical College of Virginia was made president-elect of the Virginia Academy of Science at the annual meeting in May. Dr. Morris Fishbein, Editor of the Journal of the American Medical Association addressed the student body of the College on Quackery in Medicine. The Commencement address was given on June 6 by Dr. Otis W. Caldwell, General Secretary of the American Association for the Advancement of Science. Walter M. Ormes, Jr., 1939, has been chosen to serve as the first pharmacy intern in the new hospital pharmacy of the Medical College of Virginia. Associate Professor of Biology, Roscoe D. Hughes, was granted the doctor's degree by Columbia University in May. Mr. Thomas D. Rowe has been promoted to the rank of Assistant Professor of Pharmacy.

Mr. George Kermott, President of the Minnesota State Pharmaceutical Association died at his home at Duluth on June 2. Mr. Kermott operated a strictly professional pharmacy in Duluth and had devoted the latter part of his life to the interests of professional pharmacy and pharmaceutical education in the State of Minnesota.

In the January 1939 number of the Journal, on page 31, in the discussion of the digitalis study conducted by Dr. L. D. Hiner the fact was overlooked that Mr. R. B. Smith, Jr., of the Department of Pharmacology of the University of Chicago collaborated in this work.

On June 2, Governor Cochran of Nebraska signed a bill advancing the requirements for the practice of pharmacy in that state to graduation from a college of pharmacy giving a four year course and the completion of one year of practical experience. The bill also made college graduation a requirement for appointment to the board of pharmacy examiners.

Dr. W. G. Crockett of the School of Pharmacy of the Medical College of Virginia was awarded the honorary degree of Doctor of Science by Hampton-Sydney College at the June Commencement.

Mr. Melvin F. W. Dunker who is an assistant in the School of Pharmacy of the University of Maryland and Mr. Wooten T. Sumerford of the University of Georgia and who was the Dunning Fellow in the School of Pharmacy in 1937-38, were granted the degree of Doctor of Philosophy by the Graduate School of the University of Maryland at the June commencement. Mr. John M. Cross, 1936 New Jersey College of Pharmacy and Mr. Bernard P. McNamara, 1936, University of Maryland, School of Pharmacy, were granted the master of science degree.

The College of Pharmacy of the University of Michigan held its annual symposium on May 16. Dean W. F. Rudd of Virginia was one of the guest speakers. His subject was "Some Pressing Pharmaceutical Problems."

Dr. and Mrs. Robert L. Swain were honored by the Omicron Chapter of the Rho Chi Society at its annual banquet in Baltimore on May 9. After a delicious Nebraska corn-fed steak dinner, Dr. Swain was presented with a key and the Society's certificate. He then gave a brief address in which he stressed the part the University of Maryland has taken in the development of American pharmacy and pharmaceutical research during the past fifty years. He also reviewed the advancements made in the raising of standards for pharmacy schools and pointed out that the future of American Pharmacy is dependent on the principles of the Rho Chi Society and related pharmaceutical organizations.

The pharmacy alumni of the University of Southern California at their annual banquet on May 17, honored Dean Laird J. Stabler for the completion of his forty-fifth year of service. They also honored the 1939 graduating class at a luncheon on June 8. Professor A. G. Hall has the honor of being the first faculty man to be made a member of the California State Board of Pharmacy.

Preparations are being made for the dedication of the new Pharmacy-Chemistry Building at the University of Montana on September 25th and 26th. The State Convention will be held at the same

time

Dean W. Henry Rivard of the Rhode Island College of Pharmacy and Science gave the address at the commencement exercises of the

Connecticut College of Pharmacy on June 7.

Professor David O'Day of the University of Colorado has received the doctor's degree from the State University of Iowa. His thesis subject was—The Recovery of Glutamic Acid from Sugar Beet Wastes. He has been promoted to the rank of associate professor. Dean Andrew G. DuMez of the University of Maryland and Dean C. B. Jordan of Purdue were guest speakers at the annual banquet on May 23.

The senior class of the New Jersey College of Pharmacy has joined the American Pharmaceutical Association as of June third one hundred per cent. Dean Little told the class at their banquet that he considered their action in so doing to be the finest present which has been left the college by an outgoing senior class. This was not the result of any activity on the part of the faculty, the idea originated with Mr. Albert Hirt, the president of the senior class, and he has been largely responsible in selling the idea to the seniors. It is hoped that the action of the senior class at Rutgers will become contagious and that next year many classes will follow suit.

Louis A. Wilson, 1938, Loyola University, New Orleans, has been

given a graduate fellowship at the University of Pittsburgh where he will continue graduate work. Miss Helen Creech, now of University of Tennessee will be an instructor in pharmacy at Loyola next year. Dean C. Leonard O'Connell of the University of Pittsburg spoke before the Louisiana State Pharmaceutical Convention in May on Pharmacy in a Changing World.

The Indianapolis College of Pharmacy has added a course in hospital pharmacy, open only to students in the senior class. A member of the faculty will give the lectures and supervise the hospital practice in the Indianapolis City Hospital Dispensary where in addition to the ward service more than 70,000 prescriptions are compounded and dispensed annually.

Psi Chapter of the Rho Chi Society was installed at the Massachusetts College of Pharmacy on June 6. Among the thirty charter members were included the following graduate students—Carmel R. Del Vecchio, Romulus De Nicola, John A. Hill, Jr., Norman R. Lacombe, Robert F. Larsen, Robert D. Merchant, Andrew E. Pearson, Anthony J. Pulverenti, Donald M. Skauen, and Raymond W. Vander Wyk.

A new dispensing laboratory is being equipped at South Dakota State College—Byrl Benton, M.S., 1939 has been added to the instructional staff of the Division of Pharmacy.

Dr. Solomon Colis-Cohen of Philadelphia and C. Malon Kline of the Smith Kleine and French Laboratories were both granted the degree Doctor of Science (Honoris Causa) at the June Commencement of the Philadelphia College of Pharmacy and Science.

the Philadelphia College of Pharmacy and Science.

Leo F. Godley, B.S., 1939, University of South Carolina and Frank V. Potrepka, B.S., 1937, Connecticut College of Pharmacy have been appointed graduate assistants in Pharmacy at Western Reserve. Lucille A. Burgess and Charles N. Johnson, of Western Reserve have been appointed interns in the University Hospitals at Cleveland and Francis E. Geiger, has been appointed Pharmacist at the Cleveland City Hospital.

MISCELLANEOUS ITEMS OF INTEREST

The American Association of Colleges of Pharmacy

Fortieth Annual Meeting

OFFICERS

President, Earl R. Serles; Secretary-Treasurer, Zada M. Cooper; Chairman of the Executive Committee, Ernest Little.

MONDAY, AUGUST 21

9:00 A. M. Meeting of the Executive Committee.

9:30 A. M. Teachers' Conferences.

1:30 P. M. First Session-Business.

6:30 P. M. Annual Dinner.

8:00 P. M. Second Session-Panel Discussion.

TUESDAY, AUGUST 22

9:30 A.M. Joint Session of the American Pharmaceutical Association, the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy.

2:00 P. M. Third Session-Business.

Sessions of the Association

FIRST SESSION, MONDAY, AUGUST 21, 1:30 P. M.

1. Roll Call.

- Appointment of Committee on Resolutions.
 Address of the President, Earl R. Serles.
- Report of the Secretary-Treasurer, Zada M. Cooper.
 Report of the Executive Committee, Ernest Little.
- 6. Appointment of Nominating Committee.
 7. Appointment of Auditing Committee.

8. Report of Standing Committees:

 Committee on Educational and Membership Standards, Andrew G. DuMez.

(2) Committee on Curriculum and Teaching Methods, Henry M. Burlage.

- (3) Committee on Activities of Students and Alumni, Ralph E. Terry.
- (4) Delegates to the American Council on Education, Rufus A.

 Lyman.

(5) Committee on Relations of Boards and Colleges, H. Evert Kendig.

(6) Committee on Libraries, Charles O. Lee.

(7) Committee on Problems and Plans, Rufus A. Lyman.

ANNUAL DINNER, MONDAY, AUGUST 21, 6:30 P. M.

Address, Pharmacy of Tomorrow, Dr. S. V. Sanford, Chancellor of the University System of Georgia.

SECOND SESSION, MONDAY, AUGUST 22, 8:00 P. M.

PANEL DISCUSSION Leader, Hugh C. Muldoon. Professional Relations

1. Relationship with Physicians, Marvin J. Andrews.

2. Relationship with Dentists, George C. Schicks

3. Relationship with Hospitals and Nurses, Louis C. Zopf.

 Relationship with The Public and Other Pharmacists, Clark T. Eidsmoe.

THIRD SESSION, TUESDAY, AUGUST 22, 2:00 P. M.

1. Recommendations from the Teachers' Conferences.

 Report of the Editor of the American Journal of Pharmaceutical Education, Rufus A. Lyman.

3. Reports of Special Committees

- (1) Committee on Predictive and Achievement Tests, Carl J. Klemme.
- (2) Committee on Professional Relations, George C. Schicks.

4. Reports of Special Representatives.

(1) Progress of Medicinal Plant Survey, Heber W. Youngken.

(2) Biological Abstracts, Heber W. Youngken.

- (3) Representatives to the National Drug Trade Conference, Wortley F. Rudd.
- (4) Representatives to the National Conference on Pharmaceutical Research, A. John Schwarz.

 Representatives to the Druggists Research Bureau, Paul C. Olsen.

- (6) Representative to the National Association of Retail Druggists, George L. Webster.
- (7) Representative to the National Wholesale Druggists Association, Ivor Griffith.

5. Report of the Historian.

6. Report of the Committee on Resolutions.

7. Report of the Auditing Committee.

- 8. Unfinished Business.
- 9. Miscellaneous Business.
- 10. Election of Officers.
- 11. New Business.
- 12. Executive Session.

Joint Session of the American Pharmaceutical Association, the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy

TUESDAY, AUGUST 22, 9:30 A. M.

- 1. Report of the Fairchild Scholarship Committee, E. G. Eberle.
- Report of the Committee on Pharmaceutical Syllabus, Henry M. Burlage.
- Report of the Committee on Status of Pharmacist in the Government Service, H. Evert Kendig.

 Report of the Committee on Modernization of Pharmacy Laws, Robert L. Swain.

 Discussion, The Necessity of Maintaining Adequate Professional Standards in Pharmacy, George A. Moulton, J. Grover Beard and Walter H. Cousins.

Conference of Teachers of Pharmacy

Chairman, Elmer L. Hammond; Vice-Chairman, David B. R. Johnson; Secretary, William A. Jarrett.

MONDAY, AUGUST 21, 9:30 A. M.

Discussion Topic: The Educational Function of Teachers of Pharmacy.

1. A History of the Teachers of Pharmacy.

2. The Function of Teachers of Pharmacy toward the Retail and

Manufacturing Fields, Marvin J. Andrews.

The Function of Teachers of Pharmacy toward Research Work, L. Wait Rising.
 The Function of Teachers of Pharmacy toward the Teaching

Profession, Robert C. Wilson.

5. Modern Educational Methods and Trends,

Conference of Teachers of Chemistry

Chairman, Gordon A. Bergy; Vice-Chairman, H. George DeKay; Secretary, F. Scott Bukey.

MONDAY, AUGUST 21, 9:30 A. M.

 How much Organic Chemistry does the Present Day Pharmacy Student Need?, George W. Hargreaves.

. Pharmaceutical Chemistry in a Flexible Curriculum, George L.

Webster.

 Chemistry Courses in Colleges of Pharmacy, Walter H. Hartung.
 The Teaching of Qualitative and Quantitative Analysis in the Pharmacy Schools, H. George De Kay.

Conference of Teachers of Pharmacognosy and Pharmacology

Chairman, Marin S. Dunn; Secretary, J. Hampton Hoch.

MONDAY, AUGUST 21, 9:30 A. M.

Discussion Topic: The Aims and Objectives of the Course in Pharmacology and Pharmacognosy and How to Attain Them.

 Pharmacology, A. Richard Bliss, L. David Hiner, James M. Dille, W. H. Zeigler.

 Pharmacognosy, Edmund N. Gathercoal, Franklin J. Bacon, A. John Schwarz, Robert S. Justice.

Conference of Teachers of Pharmaceutical Economics

Chairman, Frederick D. Lascoff; Secretary, B. Olive Cole.

MONDAY, AUGUST 21, 9:30 A. M.

 Accounting Theory and Practice for Pharmacy Students, Paul C. Olson.

2. Six Years in a Practice Pharmacy, M. Medford Cooper.

- Developing the Prescription Business in a Pharmacy, Ralph W. Clark.
- 4. What Economics Offers to the Pharmacy Curriculum, John V. Connor.

5. Are We Afraid?, Clarence M. Brown.

6. Education and Creation in Pharmacy Business Courses, J. H.

7. Pharmaceutical Economics?, Karl Scholz.

8. Main Street (visiomatic), Coca Cola Company.

The General Program

AMERICAN PHARMACEUTICAL ASSOCIATION AND ALLIED BODIES.

Hotel Biltmore, Atlanta, Georgia.

August 20 to 26, 1939.

PLANT SCIENCE SEMINAR-August 14th to 18th. Blue Ridge College, Blue Ridge, N. C.

FRIDAY, AUGUST 18

The American Council on Pharmaceutical Education (Room A) and the A. Ph. A. Committee on National Formulary (Room B) will hold sessions at 9:30 A. M. and 2:30 P. M. on Friday, August 18th, and Saturday, August 19th.

SUNDAY, AUGUST 20

9:30 A. M. Council, A. Ph. A. Room E.

2:00 P. M. Committee on Pharmaceutical Syllabus. Room C.

9:00 P. M. Opening Concert. Ballroom.

MONDAY, AUGUST 21

9:00 A. M. A. A. C. P.—Executive Committee. Room A.

Chemistry Conference. Room F. Pharmacy Conference. Room C.

Pharmacognosy and Pharmacology Conference. Room B.

Pharmaceutical Economics Conference, Room

9:30 A. M. N. A. B. P. Ballroom.

N. A. B. P. Luncheon. 12:30 P. M.

2:00 P. M. N. A. B. P. Ballroom.

A. C. C. P., First Session. Pompeian Room. Dinner, N. A. B. P. 2:00 P. M.

6:30 P. M.

Dinner, A. A. C. P. (Joint Dinner) Ballro A. A. C. P. Second Session. Pompeian Room. 6:30 P. M. (Joint Dinner) Ballroom.

8:30 P. M.

8:30 P. M. First Session-Conference Pharmaceutical Law Enforcement Officials. Room F.

TUESDAY, AUGUST 22

Joint Conference, A. Ph. A., N. A. B. P., and A. A. C. P. 9:30 A. M. Ballroom.

12:15 P. M. Luncheon of Recipe Book Committee.

2:00 P. M. N. A. B. P. Ballroom.

A. A. C. P. Third Session. Pompeian Room. 2:00 P. M.

2:00 P. M. National Conference on Pharmaceutical Research. Room G.

6:30 P. M. Dinner, Rho Chi Fraternity, followed by Annual Meeting. 6:30 P. M. Dinner, National Conference on Pharmaceutical Research.

First General Session, A. Ph. A. Ballroom. 8:00 P. M.

WEDNESDAY, AUGUST 23

8:00 A. M. Breakfast-Members U. S. P. Committee of Revision and Board of Trustees.

9:30 A. M. First Session, House of Delegates. Ballroom.

10:00 A. M. Women's Auxiliary.

12:45 P.M. Luncheon, Kappa Psi Fraternity and Lambda Kappa Sigma Sorority.

12:45 P. M. Luncheon, Phi Delta Chi Fraternity.

2:30 P. M. Council, A. Ph. A., Joint Session with the Executive Committee of the National Association of Retail Druggists.

Room E.

2:30 P. M. First Session-Scientific Section. Ballroom.

- 2:30 P. M. First Session—Section on Education and Legislation.
- 2:30 P. M. First Session—Section on Practical Pharmacy and Dispensing. Room F.
- 2:30 P. M. First Session—Section on Historical Pharmacy. Room A. 2:30 P. M. First Session—Section on Pharmaceutical Economics.
- Room G. 2:30 P. M. First Session—Conference Pharmaceutical Association
- Secretaries. Room B. 3:30 P. M. First Session—Sub-section on Pharmacognosy. Room D.
- 3:30 P. M. Meeting-Committee on Nominations. Room 127.
- 3:30 P. M. Meeting-Committee on Resolutions. Room 129.
- 7:30 P. M. Joint Banquet—A. Ph. A. and Related Organizations. Piedmont Driving Club, leave the Hotel at 6:00 P. M.

THURSDAY, AUGUST 24

- 9:30 A. M. Second General Session, A. Ph. A. Ballroom.
- 12:30 P. M. Luncheon-Kappa Epsilon.

12:30 P. M. Veteran Druggists Luncheon.

- 2:30 P. M. First Session-Sub-section on Hospital Pharmacy. Room C.
- 2:30 P. M. Conference of State Committee on U. S. P. and N. F. Promotion. Room A.
- 2:30 P. M. Conference of Professional Pharmacists. Room G.
- 2:30 P. M. Second Session. Conference of Law Enforcement Officials. Room F.
- 6:00 P. M. Georgia Barbecue on the Grounds of the Biltmore Hotel.
- 8:30 P. M. Second Session-House of Delegates. Ballroom.

FRIDAY, AUGUST 25

- 9:30 A. M. Joint Session, Scientific Section and Section on Practical Pharmacy and Dispensing. Ballroom.
- 9:30 A.M. Joint Session on Education and Legislation, Conference Law Enforcement Officials, and Conference of Pharmaceutical Association Secretaries. Pompeian Room.
- 10:30 A. M. Second Session-Sub-section on Hospital Pharmacy. Room
- 10:30 A. M. Second Session, Scientific Section. Ballroom.

12:30 P. M. Luncheon-Hospital Pharmacists.

- 2:30 P. M. Third Session, Scientific Section. Ballroom.
- 2:30 P.M. Second Session—Section on Education and Legislation. Pompeian Room.
- 2:30 P. M. Second Session—Section on Practical Pharmacy and Dispensing. Room F.
- 2:30 P. M. Second Session-Section on Historical Pharmacy. Room A.
- 2:30 P. M. Second Session—Section on Pharmaceutical Economics.
 Room G.

- 2:30 P. M. Second Session-Conference Pharmaceutical Association Secretaries, Room B.
- 2:30 P. M.
- 6:30 P. M. Dinner-Former Presidents, A. Ph. A. Room G.
- 7:30 P. M. Meeting-Committee on Resolutions. Room B.
- 8:00 P. M. Final Session House of Delegates. Pompeian Room.
- 10:30 P. M. Farewell Dancing Party. Ballroom.
- 9:30 A. M. Final General Session, A. Ph. A. Ballroom.
- 1:00 P. M. Council, A. Ph. A. Room E.

The Program of Entertainment at Atlanta

On Sunday night in the garden of the Biltmore Hotel, some music by one of the negro choirs. I think this will be well worth hearing and should interest a number to come early enough to hear it.

On Monday night at the banquet of the colleges, Chancellor S. V. Sanford of the University System of Georgia will speak on the subject, "Pharmacy of Tomorrow", in the course of which he will introduce some speculations as to developments from the standpoint of an educator and a layman.

On Wednesday night we will have at the Piedmont Driving Club an entertainment of a very worth while nature as the guests of the Coca Cola Company which I think will be of such character that it will stand out in the memory of all who are present.

On Thursday evening at 6 o'clock we will serve an old fashioned Georgia barbecue on the lawn of the Biltmore Hotel which again should secure the interest of those who have not had the experience of attending one of these typically southern affairs.

On Friday night from 10 until 12 o'clock, an opportunity will be given to all young men including yourself to dance to the tune of southern music at a cotton ball in the Biltmore Hotel.

A display of typical Georgia products sponsored by the Natural Resources Division of the State Government with an attendant in charge, will be provided in the lobby of the hotel which I think will be of interest to quite a number of our visitors and will give some idea as to the variety of Georgia's products and industries.

Additional special features will be provided for the ladies in attendance.

ROBERT C. WILSON, University of Georgia.

Progress Report for the Committee on the Study of the Deterioration of Drugs and Pharmaceuticals

In pursuance of the plan outlined in the American Journal of Pharmaceutical Education, Volume 3, page 143, this committee has proceeded to set up machinery whereby the first part of this project may be undertaken. This involves an exhaustive study of the literature

on the deterioration of certain drugs and preparations, carefully selected on the basis of their usefulness in medicine and their tendency to lose potency under conditions of manufacturing and storage. To facilitate this literature search, subcommittees have been set up according to the following plan. The work of some of these subcommittees will be quite extensive while the work of others will be less so. It is therefore likely that certain subcommittees will require a larger membership than others. This, as well as the apportionment of the work within the subcommittee, is a matter which will be taken up as the subcommittees are organized. Upon completion of the work of the subcommittees, the general committee will organize and correlate their findings into a volume which can be used as an authoritative reference to the literature in this field.

Subcommittee on organic compounds.

The items to be studied by this subcommittee have been tentatively set up according to the following system:

Aliphatic:

Bethenamine Formaldehyde Paraldehyde Ether Chloroform Glycerin

Aromatic:

Phenol and preparations thereof Cresol and preparations thereof Resorcinal and preparations thereof Guaiacol and preparations thereof Creosote and related preparations Benzaldehyde Camphor Santonin

Organic Acids and esters and their preparations:

Tannic acid
Albumen tannate
Ammonium salicylate
Phenyl salicylate
Methyl salicylate
Sodium salicylate
Erythrityl tetranitrate
Amyl nitrite
Ethyl nitrite
Glyceryl trinitrate

Fats and Fixed Oils:

Lard and benzoinated lard Wool fat and hydrated wool fat Chaulmoogra oil and ethyl chaulmoograte

Subcommittee on crude plant drugs:

This subcommittee will consider the deterioration which occurs in crude drugs. This is essentially a pharmacognistical problem. Drugs such as cascara sagrada, senna, aloe, aspidum, acacia, trag-

acanth, mustard, and so forth should be studied by this subcommittee.

Subcommittee on alkaloids:

The crude drugs and galenical preparations should be studied by this subcommittee. Where the alkaloid may be secured from more than one crude drug, the stability of these various crude drugs should be compared. The deterioration during storage of the crude drug, possible loss of activity during manufacture, and the stability of solutions should also be investigated. Wherever related synthetic alkaloids are used, such as homatropine, novatropine, and syntropan, these should also be made a part of the study. Some of the alkaloids which should merit study by this subcommittee are as follows:

Morphine and related alkaloids

Physostigmine

Atropine

The alkaloids of Aconite

Cocaine

Quinine

Colchicine

Ephedrine

Subcommittee on hypnotics and local anesthetics:

Although the pure chemicals belonging to these groups are stable, the preparations and solution often are not. These should be studied where they are extensively used. The methods and effects of sterilization should also be reviewed.

The barbiturates and local anesthetics of the U.S.P., N.F., and N.N.R. should be included. In addition, such hypnotics as paraldehyde, chloral hydrate, chlorbutanol, avertin, and sulphonal should be included.

Subcommittee on inorganic compounds:

The following drugs and their preparations should be reviewed by this subcommittee:

Hydrogen peroxide

Ammonium carbonate

Potassium citrate

Magnesium sulphate

Sodium sulphate

Iron salts and their preparations

Mercury salts and their preparations

Silver salts and their preparations, including the silver proteinates

Arsenic compounds and their preparations, including organic arsenicals

Bismuth compounds including organic bismuth preparations Halogen preparations:

Iodine, hydriodic acid, idoine salts, and related preparations. Chlorine compounds such as hypochlorite preparations, chloramines, and chloral hydrate.

Bromine compounds such as calcium bromide and the other bromine salts, and the elixirs prepared from them. Subcommittee on aromatic drugs and spices:

Drugs such as cardamom, cinnamon, capsicum, clove, ginger, glycyrrhiza, peppermint, spearmint, and anise should be studied by this subcommittee.

Subcommittee on digtalis glucosides and ergot:

So much controversy exists regarding the deterioration of these two drugs and their preparations that it was thought advisable to make the problem of reviewing the literature on these two drugs the subject of one subcommittee. The digitalis glucosides and glucosides having similar pharmacological actions should be included in this group. In the case of Digitalis U.S.P., the crude drug, powder and tincture should be studied, but little-used preparations such as the Infusion N.F. should be omitted.

Subcommittee on drugs of animal origin and vitamins:

The following is a division which would indicate the manner in which the drugs to be studied by this subcommittee might be classified:

Liver preparations

Hormone preparations:

Epinephrine Insulin

Pituitary Thyroid

Parathyroid

Digestive ferments:

Pepsin

Pancreatin

Vitamins:

Cod liver oil

Emulsion of cod liver oil

Solution of irradiated ergosterol

Carotene

Subcommittee on antitoxins and vaccines:

This subcommittee should review the conditions of deterioration of antitoxins and vaccines which are included in the U.S.P., N.F., and N.N.R.

JAMES M. DILLE, Chairman, University of Washington.

The Women's Auxiliary Student Loan Fund

At the Minneapolis meeting of the Women's Auxiliary of the American Pharmaceutical Association it was decided to organize a Student Loan Fund to assist women pharmacy students at the various Colleges of Pharmacy throughout the United States. The Auxiliary now has a committee at work setting up the standards and regulations under which such a fund is to be administered.

Throughout the country groups of our members are at work arranging for the collection of funds for this purpose. It is possible that you may not be reached through some of these committees, and I am, therefore, appealing to you to make your personal contribution

to this Student Loan Fund directly to the Auxiliary unless you have heard from a local Committee Chairman. These conrtibutions can be sent to the Women's Auxiliary, in care of the American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington, D. C., or they can be sent to me at 640 West State St., Trenton, N. J.

We are endeavoring to raise one thousand dollars by the time of the Atlanta convention. Your contribution will be greatly appreciated for any amount you feel able to give. Donations of \$1.00 and up are earnestly solicited, and I trust that we may have your support

in this worth-while endeavor.

Mrs. Robert P. Fischelis, President.

The Pharmaceutical Syllabus and Its Revision. VI.

As stated in the fifth progressive report of the Syllabus Committee, a provisional list of required subjects deemed as minimum essentials for the development of a safe pharmacist has been submitted by the Executive Committee to the members of the Committee and to the American Council on Pharmaceutical Education, for consideration. It is hoped that this list will be acted upon at a scheduled meeting of the Committee to be held in Atlanta in August. After this action, the list, complete with approved titles, prerequisites, minimum and optimum hours and years of curricular sequence, will be submitted to the schools, boards and other interested groups and individuals for criticism and suggestion, before final adoption.

New additions to subcommittees include: (1) Galenical Pharmacy—E. O. Leonard, Idaho; F. D. Stoll, Louisville. (2) New and Non-official Remedies—G. E. Cwalina, Creighton; C. O. Lee, Purdue. (3) Pharmacy of Inorganic Substances—P. H. Dirstine, Washington State; Edward Spease, Western Reserve. (4) Pharmacy of Organic Substances—R. A. Keuver, Iowa; R. T. Lakey, Wayne; Linwood Tice, Philadelphia; C. P. Wimmer, Columbia. (5) Inorganic Pharmaceutical Chemistry (Qualitative?)—E. V. Lynn, Massachusetts; C. F. Poe, Colo-

rado: Leon Richards, Montana.

Henry M. Burlage, Chairman.

American Council on Pharmaceutical Education Progress

The Council has applied itself diligently to the work of inspecting colleges of pharmacy during the year. Seven of its members have given as much time as they could spare to this work. In spite of the effort which was made to complete the inspections before the end of the school year, it was impossible to do so. There still remain seven of the colleges which made application for accreditment to be inspected. These inspections will have to be made in the fall after the colleges open and it seems that it will, therefore, not be possible to publish a roll of accredited colleges until December of this year or January 1st of next year.

A full account of the work of the Council for the past year will be given at the joint meeting of the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy, and the American Pharmaceutical Association to be held in Atlanta in August during the annual convention of the American Pharmaceutical Association.

A. G. DuMez, Secretary.

Program of the Sub-Section (N2) on Pharmacy

OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Which was held at Milwaukee, Wisconsin, June 19-24, 1939.

SYMPOSIUM

VITAMINS with Particular Reference to their Standardization. Tuesday Morning Session, June 20, 10:00 a. m.

Vitamin B₁, Thiamin. Aaron Arnold, University of Wisconsin.
 Riboflavin. P. H. Phillips, University of Wisconsin.

- 3. Nicotinic Acid. C. A. Elvehjem, University of Wiscnsin.
- 4. Chick Antidermatitis Factor and Vitamin Be. W. D. Wooley. University of Wisconsin.

Tuesday Afternoon Session, June 20, 2:00 p. m.

- 5. Vitamin A. A. Black, E. E. Squibb and Sons, New Brunswick, New
- 6. Vitamin E. Mrs. Flemintine P. Dann, Abbott Laboratories, Chicago, Illinois.

ABSTRACT OF PAPERS

Two sessions of the subsection on pharmacy were devoted to a symposium on the vitamins with particular reference to their standard-

Dr. Aaron Arnold in his report on thiamin pointed out that interfering substances limit the value of the chemical methods of determination and that the biological method based on growth is the most reliable procedure. Simpler and more rapid methods for the determination of thiamin and new criteria of its functions will make it possible to determine whether the level for optimum nutrition is appreciably above the requirement level. Dr. P. H. Phillips in comparing the methods for the assay of riboflavin based on fluorescence, color and photolysis, and growth promotion, pointed out that the bioassay method is the most accurate method now known but that the colorin etric method offers much promise when applied to the degradation products of this vitamin. Methods using micro-organisms are economical, rapid and accurate for the determination of trace levels. Evidence has been obtained which indicates that riboflavin may be necessary for the deaminization of amino acids and the formation of urea in the liver. It plays an important role in nerve nutrition in chicks which exhibit neuromalacia on low riboflavin diets and recover rapidly when the deficiency is supplied by the administration of riboflavin. Dr. C. A.

Elvejen reviewed the procedure which led to the isolation of the nicotinic acid fraction of the Vitamin B complex. He showed that while chemical procedures, bacterial growth methods, and bioassays offer possibilities, the most reliable assay procedure at present is the curative method applied to dogs in which black tongue has been induced by feeding a suitable nicotinic acid deficient basal ration. was emphasized that a chemical method of assay is greatly needed so that our knowledge of the distribution of nicotinic acid as well as other factors in foods may be made known. When this knowledge is available, it will be possible to modify the diet, particularly in areas where pellagra is prevalent and fortify the diet with nicotinic acid if necessary to prevent the disease. Dr. D. W. Wooley discussed the chick antidermatitis factor and pantothenic acid of the vitamin B complex. The assay of the former is best carried out on chicks by noting the growth and prevention of dermatitis as compared to chicks on a basal diet. A method for the determination of pantothenic acid which is rapid, economical and accurate has been devised. It is based on the discovery that pantothenic acid is essential for the growth of a wide variety of hemolytic streptococci. An assay by this method can be completed in twentyfour hours and it excels the animal method in precision. All of the authors of papers pertaining to the vitamin I; complex emphasized the need for chemical methods of assay and for methods of assay which would permit the determination of the concentration of vitamins in the blood.

Dr. A. Black critically examined the factors which influence the accuracy of vitamin A assays. He pointed out that the biological methods measure the combined vitamin A activity of the various compounds which may become available as vitamin A to the rat and that the method is not specific for any particular kind of vitamin A. Methods based on the measurement of the absorption of light by means of spectrophotometers have been widely used and are the most accurate and give the most information about the sample.

Vitamin E, the anti-sterility vitamin, was reviewed as to its sources, isolation, chemistry, physiological activity and assay by Mrs. Flemintine P. Dann. The production of pure alpha tocopheral (Vitamin E) offers promise of leading to a more quantitative method than the present bioassay.

Dr. A. H. Uhl of the University of Wisconsin acted as secretary. Both the morning and afternoon sessions were well attended.

GLENN L. JENKINS, Chairman Program Committee University of Minnesota.

Hospital Internship in Pharmacy

One of the signs of the time that brings satisfaction to those who are interested in the development of professional pharmacy is the ever increasing number of hospital pharmacy internships which are being established. Just recently Temple University at Philadelphia, has established one and Johns Hopkins Hospital at Baltimore has established two, and announced they are open to the graduates of accredited

colleges of pharmacy. The notice of the establishment of the Johns Hopkins internships reads as follows: "These internships will be for a period of twelve months, beginning on July 1, 1939. Maintenance during this period will be provided by the hospital. It will be necessary for interns to occupy quarters in or near the hospital, as supplied. Off-duty hours must be arranged that one pharmacist-intern will be on call when the hospital pharmacy is closed. An allowance of \$20.00 per month will be made for necessary outside expenses for each intern. Regulations regarding personal conduct and habits will be those established by the Director of the Hospital for interns on other hospital services.

Opportunity will be offered for well-rounded practical experience in hospital manufacturing and dispensing procedures under capable supervision. Eight registered pharmacists are included in the full-time staff of the Pharmacy Department of this institution. All drug products and laboratory reagents used in the various clinics and outpatient departments of the hospital are supplied through the hospital pharmacy. The facilities of the Welch Medical Library are available for pharmacists who may wish to continue study during internship."

Educational programs such as are being carried out at Western Reserve University are undoubtedly an important factor in the establishment and the growth of hospital pharmacy in recent years. Just as important a factor and perhaps even more so has been the attitude of the American College of Surgeons. In its Manual of Hospital Standardization the following minimum standards for pharmacy in hospitals is given:

Organization. The hospital shall have pharmaceutical service:

 (a) the full time of a graduate registered pharmacist, or
 (b) pharmaceutical service from an approved nearby pharmacy.

2. Committee. The hospital shall appoint a pharmacy committee, which shall meet at regular intervals. The members of the committee shall be chosen from the several divisions of the medical staff. The pharmacist shall be a member of the committee and shall serve as its secretary. He shall keep a transcript of proceedings, and forward a copy to the proper governing board of the hospital.

The purposes of the pharmacy committee shall be: (a) to determine the policy of operation of the pharmacy, and to deal with such other matters of pharmaceutical nature as may from time to time arise, (b) to add to and delete from the drugs used, (c) to supervise the purchase and issuance of drugs, chemicals, pharmaceutical preparations, biologicals, and pro-

fessional supplies within the hospital.

3. Library. The hospital shall maintain an adequate pharmaceutical reference library: (a) United States Pharmacopœia, National Formulary, New and Nonofficial Remedies, United States Dispensatory, reference works on inorganic, organic, and qualitative chemistry, pharmacology and toxicology, bacteriology, and a medical dictionary, (b) The Journal of the American Medical Association, The Journal of the American Pharmaceutical Association, the Year Book of the American Pharmaceutical Association, the federal regulations relative to the dis-

pensing of alcohol and narcotics, and a copy of the state and municipal pharmacy laws and sanitary code.

4. Standards. The hospital shall use drugs, chemicals, and pharmaceutical preparations of at least United States Pharmacopœia, National Formulary and New and Nonofficial Remedies quality in the treatment of patients.

5. Supervision. The pharmacist shall have immediate supervision over: (a) the routine preparation of injectible medication and sterilization of all preparations he himself prepares, (b) the routine manufacture of pharmaceuticals, (c) the dispensing of drugs, chemicals, and pharmaceuticals, (d) the filling and labeling of all drug containers issued to nursing units from which medication is to be administered, (e) a semi-monthly inspection of all pharmaceutical supplies on nursing units, (f) the maintenance of an approved stock of antidotes in the emergency suite, (g) the dispensing of all narcotic drugs and a perpetual inventory of them, (h) specifications for purchase of all drugs, chemicals, and pharmaceutical preparations used in the treatment of patients, (i) specifications for purchase and storage of biologicals and all operations wherein a special knowledge of pharmacy, including a ready knowledge of weights and measures in all systems, is necessary.

The Manual also makes the following comprehensive comments on the hospital pharmacy:

> "The pharmacy is one of the most extensively used therapeutic facilities in the hospital, and yet there is an urgent need for the improvement of this service in many institutions. Hospital managements and medical staffs should direct attention to the organization of an efficient, ethical pharmacy which will insure safety and the best service possible to the patient. As a helpful guide to this end, the five principles have been embodied in a minimum standard for hospital pharmacies.

> "As noted in the foregoing requirements, the pharmacy should supply all drugs to both in-patient and out-patient services, whether they be manufactured stock drugs and solutions or prescriptions. The most effective means of securing efficiency and economy in this department is the adoption of a well compiled hospital pharmacopæia that will facilitate uniform prescribing of drugs and limit them to the official pharmaceutical preparations. Some hospitals have applied this plan most

successfully with results beyond all expectations.

"The law in most states and provinces requires that only licensed pharmacists may compound prescriptions, and this law should be strictly observed. A pharmacist may be on a full time or part time basis as required, and he alone should be allowed to dispense prescriptions. If the amount of work does not warrant the employment of a pharmacist, arrangements should be made with one in a convenient commercial pharmacy to dispense all prescriptions, the hospital possibly maintaining a drug room from which stocks of manufactured drugs are issued. It may be found advisable in some hospitals to employ a part time pharmacist who spends a few hours each day at the hospital.

"The physician's order for drugs should be written in duplicate, the original being sent to the pharmacy and the duplicate retained on the floor. Keeping such a record in the pharmacy is a legal requirement often ignored. All prescriptions are then numbered and filed serially in one of the prescription files designed for use in a commercial pharmacy.

"Because of the serious responsibility of supplying a reliable pharmacy service in hospitals, every institution should endeavor to comply as far as possible with the essential requirements embodied in the foregoing minimum standard."

It is interesting to note that the Minnesota State Board of Pharmacy as a part of its educational program is circulating this information in pamphlet form to the druggists and the hospitals in Minnesota.

RUFUS A. LYMAN.

An Advertisement Sponsored by Dr. Clifford W. Long and His Associates

(Any item dealing with men who have made medical history is worthy of being preserved. The following advertisement was discovered by Dr. Robert C. Wilson of Georgia while looking through some old Athens papers in search of any item concerning Clifford W. Long, probably the discoverer of the anesthetic properties of ether. In noting the date, 1865, the raising of fees had reference to the deflated value of confederate money and this will explain why they make the statement that "the old fees will prevail if they are paid in produce" which had more value than confederate money.—Editor.)

THE ADVERTISEMENT

The Banner-Watchman Wednesday Morning, Feb. 15, 1865

PHYSICIAN'S FEES

Athens, Georgia January 18, 1865

"A meeting of the physicians was held this morning at the office of Drs. C. W. & H. R. J. Long, and was organized by the nomination of Dr. G. L. McCleskey as chairman, and Dr. B. M. Smith, Secretary.

"The chairman explained the object of the meeting to take into consideration the prices to be assessed for professional services, and if possible to arrive at a just and suitable schedule for the same.

"Upon consultation it was unanimously agreed that the fees should be:-

Single visit-	-daylight	\$15.0
66 66	Night	
Mileage	Day	5.0
66	Night	
Accouchement Simple		200.0
	(\$250.00 and up)	
Accouchement Complicated		250.0
Extracting teeth		5.0
Phlebotomy & Cupping		5.0
Opening abscesses		
Examination and Prescription		10.0
Consultation fee		25.0
Small pox case, per visit		150.0

"It is with regret that we are compelled to advance the fees, but the necessity for it is sufficiently obvious to need no comment, sentiments of the meeting are that professional services should be at the old standard prices if payment is made in produce, or the necessary articles of life at the old prices.

"On motion it was resolved that all bills are due when the case is

dismissed, and settlements are required every three months.

G. L. McCleskey

Advertisement dated February 14, 1865." R. D. Moore C W. Long B. M. Smith J. B. Carlton H. R. J. Long Cicero Holt

Another College for India

The Bengal (India) Pharmaceutical Association has a very active committee at work upon a scheme to establish and maintain a college of pharmacy perhaps in Calcutta. Considerable sums of private money have already been given and it is hoped the Government will supplement this fund. A study was made eight years ago by a group known as the Drugs Enquiry Committee which called attention to the chaotic conditions in pharmacy prevailing throughout the country and strongly urged enactment of a Central Drugs and Pharmacy Act to control the import, manufacture, handling, sale, compounding and dispensing of drugs and allied products as well as the immediate introduction of a proper and modern system of education and training in pharmacy. The college committee is making excellent progress and Mr. Premananda Das, who is Organizing Secretary for the Bengal Pharmaceutical Association has asked Secretary Cooper to request the deans of American colleges of pharmacy to send him school catalogs or any other material which would be helpful in college planning and curricular building. The address is P. O. Box 2348, Calcutta, India. The activity of this association as well as that of the United Provinces Pharmaceutical Association which has already established a college of pharmacy at the Benares Hindu University, Benares, bodes well for the improvement of pharmaceutical practice in India.

RUFUS A. LYMAN.

Students Elected to Honorary Scholarship Societies During the Academic Year 1938-1939

Phi Beta Kappa

University of Washington .- D. A. Bitar

Sigma Xi

State University of Iowa,-Henry C. Miller Oregon State College,-Frederick A. Fuhrman

University of Minnesota,—Edward A. Brecht University of Washington,—Victro Frederick, Buster Holiday, Helen Kipple, Hugh MacPoland, Mae Belle Wellman, Alice Barton, D. A. Bitar, Roberta Dodds, Gordon Dotson, Elizabeth Elliot, Tom Middleton, Helen Pearson, George Whatmore, Hertha Willock.

University of Colorado,-Joseph Sprowls, George Hager

George Washington University,-L. C. Granting (University of Florida Chapter)

University of North Carolina,-C. C. Oates, Jr.

Rho Chi

University of Minnesota,-Howard V. Lake, Eugene C. Lee, Sister Agnes Veronica Lunney, Sister Mary Alice Vear

Medical College of Virginia,-Frieda Karsh, S. A. Hirsch, R. L.

Lucas, Charles G. Patterson, Jr.
University of Southern California,—Jack L. Chase, Ryo Komae, Thomas Jones, Fred Powers, Alan Ries, Sister Elizabeth Lisette

University of Washington,-Roberta Dodds, Helen Kipple, Hugh MacPoland, Robert Will, Juanita Loode-Motz, Rose Miles, Troy Becker, Harriette Dore, Alice Codling, Elizabeth Elliot, Jay Underhill, Hertha Willock, Bart Proper, Buster Holiday, Dr. E. M. Plein

University of Maryland,-A. Wayne Ruddy, Eugene Jacobs, Lawrence L. Lieberman, Lillian Passen, Melvin Mutchnik, Joseph U. Dorsch,

Victor H. Morgenroth, Mildred Schlaen, Bernard S. Feinstein

State University of Iowa,-Howard L. Johnson, Frederick A. Quire,

Gordon H. Sheffield

Western Reserve University,-William H. Hosler, Nettie P. Watts. Sanford Cohen, Clarence H. Egbert, John C. Mikalek, Norman Kutler South Dakota State College,-Harold Cooper, Evelyn Stene, Ronald

Helder, Arthur Schwarting, Robert Manning, Milford Schwartz

University of North Carolina,—Altajane Holden, Anna Burks, A. N. Costner, L. A. Lorek

Phi Kappa Phi

University of North Dakota,-Renard Monti

Auburn Polytechnic Institute,-Ruby Helen Stokes, Professor George W. Hargreaves

Oregon State College,-Helyn L. Long

University of Southern California,-Dario Balzano, Kiyomi Kawamoto, Setsuko Kobayashi, Norman Fred Siskel

Iota Sigma Pi

State University of Iowa,-Marjorie L. Moburg, Phyllis M. Smith

Phi Sigma

University of Washington,-H. E. Raskov, A. W. Steers, P. A. Tornow, O. H. Miller, Dr. E. M. Plein

Phi Lambda Upsilon

University of Minnseota,-Rugnar Almin, Herbert J. Cole

Kappa Tau

University of Monatna,-James Hoppe

Alpha Sigma Nu

New Orleans College of Phacmary,—James D. Vinci, Nicholas Montalbano

SPECIAL HONORS AND PRIZES

Oregon State College,—Twenty-five dollar prize of the Women's Auxiliary of the Oregon State Pharmaceutical Association, given annually to the woman senior who has shown proficiency in scholarship, qualities of leadership and womanhood, and success in student activities—Alberta Imogene Wilson.

Scholarship certificate and one year's membership in the American Pharmaceutical Association awarded by the North Pacific Branch of the Association—Helyn L. Long.

University of Minnesota,—Rho Chi Prize—Jack Gordon.

Minnesota State Pharmaceutical Association Scholarship—Sam D.

Levin.

University of Southern California,—The Miller Plaque for outstanding leadership—Setsuko Kobayashi.

University of Washington,—Rho Chi Prize—Fred Bently Hard. Linton Memorial Prize—Nathan Hall. Women's Auxiliary of the Washington State Pharmaceutical Association Prize—Arthur E. Olson. McKesson and Robbins Prize—Hertha Willock.

Louisville College of Pharmacy,—The College medal for honors and the Dilly Memorial medal for proficiency in all branches of pharmacy—Norbeck Heichelbach. The Board of Directors medal for second honors—Robert G. Carrithers. The George H. Gould and Son medal for freshman honors, the Otterback Brothers medal for sophomore honors, and the McKesson, Peter Neat Company medal for junior honors went to Mildred Ann Moore, James D. Bradbury, and Coleman Friedman, respectively.

University of Maryland,—Gold Medal for general excellence—Maurice Wiener. The William Simon Memorial Prize for proficiency in practical chemistry—Melvin Mutchnik. The L. S. Williams practical pharmacy prize—Victor Hugo Morgenroth, Jr. The Conrad L. Wich botany and pharmacognosy prize—Louis Thomas Sabatino. Certificate of Honor—Eugene Jacobs. Honorable mention for excellence in scholarship in third-year class—Mildred Schlaen, Bernard Samuel Feinstein, Leonard Gumenick.

Philadelphia College of Pharmacy and Science,—The Procter, the Frank Gibbs Ryan, the William B. Webb Memorial, the Frederick William Haussmann Memorial, and the Remington Memorial prize—Charles Henry Pressel. The Alumni Association gold medals—Charles Henry Pressel, Joseph Nicholas Masci. The Mahlon N. Kline theoretical

pharmacy prize-Edward Saul Rubin. The Maisch botany prize-Joseph Masic Gambescia. The Women's Auxiliary of the Dauphin, Cumberland, and Lebanon Counties Pharmaceutical Association prize-Blanche Frances Anconetani. The American Institute of Chemistry award-Joseph Nicholas Masci.

State University of Iowa,—The Cooper prize,—Kenneth H. Stahl. The Kuever prize,—Norman R. Johnson. The Rho Chi prize,—Lyle C.

Searle. The Teeters prize,-Phyllis M. Smith.

Connecticut College of Pharmacy,-Pharmacy Commission prize,-Everett Mott. Garvin Memorial prize,—Cecil Johnson. Biochemistry prize,—Edna Geseneiser. Trustees prize,—Sister Marian. Huber Scholarship,-Albert Amato. Analytical Chemistry prize,-Walter Dyboski. Veteran's Association prize,--Lewis Reese.

George Washington University,-The Kalusowski prize,-James T. Haden, Seymour Adler. The activity prize,-Reginald M. Richardson.

The Goddard medal,—Charles W. Clayton.
University of Kansas,—The Merk's Index prizes,—Betty Busen-

bark, DeWitt Harkness, Jane Stewart.

University of North Carolina,-Hancock prize,-Grey B. Kornegay.

Buxton William Hunter medal,-Joe Tunsdale.

South Dakota State College,-Graduate with "High Honor"-Gilford Gross. Graduate with "Honor",-Virgil Wiebelhaus, Kenneth DeBois. Sout Dakota State College Alumni Association Prize,—Evelyn Stene. The Sigma Lambda Sigma and the Annual prize given by the South Dakota State Board of Pharmacy,-Mary Jane Noonan.

Western Reserve University,—Senior Scholarship award,—Norman Kutler. Junior Scholarship award,—Ernest Becker. Sophomore Scholar-

ship award,-Julius Gerlock, Atrrur Roth.

The Lehn and Fink Medal

North Dakota Agricultural College,-Renard Monti University of Nebraska,-Don Mathieson Oregon State College,-Frank Robins Henry Medical College of Virginia,-Zalmon I. Blackman University of Southern California,-Norman Siskel University of Washington,-Florence Liberty Turbitt Louisville College of Pharmacy,—Norbert Heichelbach University of Montana,-Ann Pichioni Connecticut College of Pharmacy,—Saul Slonimsky University of North Carolina,—A. A. Hardee University of Kansas,—Albert A. Laughlin South Dakota State College,-Gilford Gross

New Books

A TEXTBOOK OF PHARMACOGNOSY by George Edward Trease, B. Pharm., Lecturer on Pharmacognosy in the University College of Nottingham. Third edition, 1939. 739 pages. 233 illustrations. Williams and Wilkins Company. Price \$6.00.

This edition has been previously reviewed but a second printing is just from the press. There are many special features which make the book valuable both as a classroom text and also as a supplementary text. Among these are the historical references, the story of the London commerce in drugs, the methods of extraction of plant principles, medicinal plant culture, and the collection, drying, storage and technique for the evaluation of drugs. A series of maps giving the source of drugs in all parts of the world is appended. In the preparation of the book the author has had the assistance of a number of distinguished scientists including Dr. Ralph Bienfang of the University of Oklahoma. The book is a distinct contribution to the literature of the field.

THE MICROSCOPICAL STUDY OF DRUGS by Lilian A. Kay, B. Pharm., Ph.C. Lecturer in Pharmacognosy, Leicester College of Technology. 1939. 229 pages. 11 figures. 47 plates. Williams and Wilkins Com-

pany. Price \$4.00.

This book fills a much needed place. It gives the student definite methods to be followed in the preparation of fresh, dry, and powdered drug plant tissues, and also of various fabrics used for medicinal and surgical purposes. It gives the basic principles involved in making microscopic drawings for the proper illustration of plant tissues, and methods of micromeasurement and micro-chemical testing. The plate drawings are exceptionally clear. An excellent method book to accompany any good text on pharmacognosy.

Medical Jurisprudence and Toxicology by William D. McNally, A. B., M. D., Assistant Professor of Medicine and Lecturer in Toxicology, Rush Medical College, University of Chicago. 1939. 386 pages; illus-

trated. W. B. Saunders Company. Price \$3.75.

A condensation of the larger text by the author in order to meet the needs of students of medicine, pharmacy and dentistry, as well as the practitioner of medicine. The first part of the book deals with the function and responsibilities of the courts, the coroner, and the witness. Medical evidence, signs of death, identification of the dead, and the medico legal aspects of injuries from abortion, infanticide and insanity are all discussed, stressing the points expected of the doctor and all those coming in contact with the injured or dead. A chapter deals with examination of blood and seminal stains including chemical tests and spectroscopic analysis. The balance of the book deals with the toxicology of practically all types of poisons including the latest organic synthetics. The book covers in a fine way the needs of the pharmacy student.

AMERICAN MEDICINE MOBILIZES by James Rorty. First edition 1939. 358 pages. W. W. Norton and Company, Inc. Price \$3.00.

The book discusses the various aspects of socialized medicine pro and con. It shows how the physician and patient alike are victimized by the conflict between business and professional ethics. The book is not a hostile arraignment of the medical profession. The author declares that he is an admirer of "those medical pioneers who have risked their careers, their reputations, and their peace of mind in the effort to release modern medicine from the swaddling clothes of its nine century forms of practice". It is well worth reading and should find a place in the pharmacy library.

Personal and Community Health by C. E. Turner, A. M., Sc. D., Dr. P. H., Professor of Biology and Public Health, Massachusetts Institute of Technology. Fifth edition, 1939. 652 pages. 127 illustrations. 4 colored plates. The C. V. Mosby Company. Price \$3.00. The problems of personal and community health are treated in a very understandable way and in a very practical manner. Under community health is discussed the science of disease prevention, the control of food and water supply, the disposal of waste, ventilation, heating, lighting, public health administration, maternal and child hygiene, school hygiene and industrial hygiene. An appendix deals extensively with the control of communicable diseases. The publisher has done a good job. The book is an excellent text for courses in public health.

ANNUAL REVIEW OF PHYSIOLOGY edited by James Murray Luck and Victor E. Hall, Stanford University. Volume 1, 705 pages. Published by the American Physiological Society and Annual Reviews, Inc. and on sale by Annual Reviews, Inc., Stanford University P. O., Cali-

fornia, 1939. Price \$5.00.

To the teacher and investigator in physiology this new annual review should fill a distinct need in supplying him with reviews of twenty-five selected topics in physiology, including general and local anesthesia. As authors, the editorial board has selected well known physiologists, primarily from this country. In addition to a complete author and subject index, each chapter has an extensive bibliography appended, indicating the sincere efforts of the reviewers to include practically all of the important work of the previous two years. Presumably the subsequent volumes will include topics for which space was not available in the present issue so that this new review may truly come to fulfill its function as a supplement to the Physiological Review and the Ergebnisse der Physiologie. It will also form a suitable companion to the Annual Review of Biochemistry published by the same concern.

LABORATORY GUIDE IN EXPERIMENTAL PHARMACOLOGY by Charles W. Edmunds, A. B., M.D., and Arthur R. Cushny, A. M., M. D., LL. D., F. R. S., Professors in the Department of Materia Medica in the University of Michigan. Fourth Edition cloth, 262 pages, 12 illustrations.

George Wahr, Ann Arbor, Michigan, 1939. Price \$2.00.

Because this laboratory guide has been written primarily for the use of medical students the first twenty-five pages of text material have been given over to a study of the chemistry of drugs and selected medicinal preparations. The remainder of the book describes more completely tests dealing with the physical and chemical properties of the drugs. The pharmacy student should be benefited by noting which of these properties seem most important from the medical point of view. The major part of this book deals with observations upon the actions of drugs upon various systems of the body and includes the bioassay of several United States Pharmacopæial preparations. With very few exceptions these experiments seem suitable for a one semester course in pharmacology in the pharmacy schools in that "in keeping with the original idea, the use of apparatus has been kept at a minimum, emphasis being placed upon the training of the student to observe deviations from the physiologic normal. Efforts have been made to simplify the work wherever possible and stress a thorough study of those drugs which are well established, as a working knowledge of the action of these can easily be supplemented by a study of the newer introductions into medicine." Approximately half of the book consists of blank pages for note taking.

TEXTBOOK OF HEALTHFUL LIVING by Harold S. Diehl, M.A., M. D., Sc. D., Professor of Preventative Medicine and Public Health and Dean of the Medical Sciences, University of Minnesota. Second Edition 1939, 634 pages. Illustrated. McGraw-Hill Book Company. Price \$2.50.

A complete revision of the first edition with a number of special features added including a chapter on parenthood, community health and health organizations, new charts and illustrations and an appendix giving the complete report of the Committee of the American Public Health Association on the Control of Communicable Diseases. The easy reading style of the first edition is retained and questions at the end of each chapter are intended to stress the main points in the text.

THE INDIAN JOURNAL OF PHARMACY,—the official publication of the United Provinces Pharmaceutical Association, Benares Hindu University, Benares, India. Published quarterly. Subscription price per annum Rs. 3 in India, Rs. 4 abroad.

A second time we call attention to this excellent journal, the second number of which has just come from the press. It contains many scientific papers, an outstanding one being "Some Medical Plants of Kashmir" which was continued from the first number. This journal should be added to your library.

THE INDIAN and EASTERN CHEMIST,—the official publication of the Bengal Pharmaceutical Association. P. O. Box 2348 Calcutta. An excellent monthly journal dealing with the problems of pharmaceutical education and practice in India and in Bengal in particular. It is in its twentieth volume. Subscription price in India, Burma and Ceylon, Rs. 5.

TRANSACTIONS OF THE UKRAINIAN INSTITUTE ON EXPERIMENTAL PHARMACY, Volume 1, 1938. 183 pages. Address, The Ukrainian Association for Cultural Relations with Foreign Countries Book Exchange. Melnik Street 44, Kiev, U.S.S.R.

A collection of scientific researches covering the fields of pharmacy, pharmacology and pharmacognosy. The papers are printed in Russian, but an abstract in English follows each article. The abstracting is well done, giving the essential facts in each paper.

Modern Pharmacy,—published by Parke, Davis and Company, Detroit. After a lapse of several years the publication of this journal has been renewed with the hope that it will be written and edited very largely by the pharmacists of the country in their own interest. The publishers so urge. Every druggist has ideas which have come to him out of the experiences of his life which should be recorded and passed on to others. By such interchange of thought pharmacy will be strengthened. We druggists live too much by ourselves. The American Journal of Pharmaceutical Education welcomes Modern Pharmacy back to the journalistic field and hopes to find it a champion of the plan that retail druggists, as well as all others who make money in pharmacy should come to the financial support of our pharmaceutical educational and research institutions upon which the future of pharmaceutical practice depends.

INSTITUTIONS HOLDING MEMBERSHIP IN THE ASSOCIATION

ALABAMA

Alabama Polytechnic Institute, School of Chemistry and Pharmacy, Auburn; Clifford L. Hare, Dean; Lynn S. Biake, Head Professor (1905*).

CALIFORNIA

University of Southern California, College of Pharmacy, Los Angeles; Laird J. Stabler, Dean (1918).

COLORADO

University of Colorado, College of Pharmacy, Boulder; Homer C. Washburn, Dean (1931)

CONNECTICUT

Connecticut College of Pharmacy, New Haven; Henry S. Johnson, Dean (1935).

DISTRICT OF COLUMBIA

George Washington University, School of Pharmacy, Washington; W. Paul Briggs, Dean (1900).

Howard University, College of Pharmacy, Washington; Chauncey I. Cooper, Acting Dean.

FLORIDA

University of Florida, Gainesville; College of Arts and Science, Townes R. Leigh, Dean; School of Pharmacy, B. V. Christensen, Director (1925).

GRORGIA

University of Georgia, School of Pharmacy, Athens; Robert C. Wilson, Dean (1928).

IDAHO

University of Idaho, Southern Branch, College of Pharmacy, Pocatello; Eugene O. Leonard, Dean (1927).

ILLINOIS

University of Illinois, College of Pharmacy, Chicago; Albert H. Clark, Acting Dean (1900).

INDIANA

Indianapolis College of Pharmacy, Indianapolis; Edward H. Niles, Dean (1927).

Purdue University, School of Pharmacy, Lafayette; Charles B, Jordan, Dean (1901).

University of Notre Dame, Department of Pharmacy, Notre Dame; Lawrence H. Baldinger, Director (1907).

Valparaiso University, College of Pharmacy, Valparaiso; Frederick V. Lofgren, Dean (1922).

IOWA

State University of Iowa, College of Pharmacy, Iowa City, Rudolph A. Kuever, Dean (1901).

KANBAS

University of Kansas, School of Pharmacy, Lawrence; L. D. Havenhill, Dean (1900).

KENTUCKY

Louisville College of Pharmacy, Louisville; Gordon L. Curry, Dean (1900).

LOUISIANA

Loyola University, New Orleans College of Pharmacy, New Orleans; John F. McCloskey, Dean (1921).

Xavier University, College of Pharmacy, New Orleans; Lawrence F. Ferring, Dean (1933).

MARYLAND

University of Maryland, School of Pharmacy, Baltimore; Andrew G. DuMez, Dean (1900).

MASSACHUSETTS

Massachusetts College of Pharmacy, Boston; Howard C. Newton, Dean (1996).

MICHIGAN

Detroit Institute of Technology, College of Pharmacy and Chemistry, Detroit; Esten P. Stout, Dean (1923).

Ferris Institute, College of Pharmacy, Big Rapids; Simon Benson, Dean (1938). Wayne University, College of Pharmacy, Detroit; Roland T. Lakey, Dean (1925). University of Michigan, College of Pharmacy, Ann Arbor; Howard B. Lewis, Director (1900).

MINNESOTA

University of Minnesota, College of Pharmacy, Minneapolis; Charles H. Rogers, Dean (1901).

MISSISSIPPI

University of Mississippi, School of Pharmacy, Oxford; Elmer L. Hammond, Dean (1913).

MISSOURI

St. Louis College of Pharmacy, St. Louis; Charles E. Caspari, Dean (1900).

MONTANA

State University of Montana, School of Pharmacy, Missoula; Charles E, F. Mollett, Dean (1917).

INSTITUTIONS HOLDING MEMBERSHIP IN THE ASSOCIATION

Talversity, College of Plantage, Comple; William A. Jarrett, Desc

to James University, The State University of New Jersey, New Jersey College of Phermaty, Newark; Ernest Little, Denn (1923).

cern Canculva University of North Carolina, School of Pharmace, Chapel Hill; J. Grover Beard, Dwn (1817).

North Dakota Agricultural College, Divi-sion of Pharmacy, Pargo; William F. Sufre, Dean (1922).

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